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With Which Is Combined

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Buys Control of Hawley Pulp & Paper Co.

Blythe & Co. of Portland, Ore. Purchase Controlling Interest in News Print Plant at Oregon City—Officials Say That The Plant Will Continue To Be Operated As An Individual Unit and That The Mill Will Not Be Merged With Any Other Concern—Reorganization Not Yet Effected

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., July 5, 1929.—Blythe & Co., bond house with offices in the Pacific building, Portland, on July 2 announced that the firm had purchased a controlling interest in the Hawley Pulp and Paper Company, whose mill is located at Oregon City.

While it has been rumored that this plant would be taken over by the Crown-Willamette Paper Company, this rumor was denied by M. B. Griffith, northwest manager of Blythe & Co. "We shall continue to operate as an individual plant and not be merged with any other company," he stated.

Refinancing of the Hawley Pulp and Paper Company has been known to be under way for some little time. In April of 1929 the Hawley Pulp and Paper Company passed up its quarterly dividend, but the interest on its bonds was met July 1.

No reorganization of the company has yet been made and consequently it is not known who will be president or manager, according to W. P. Hawley, Jr.

The Hawley mill was founded by W. P. Hawley, who is now in Europe. It has a capacity of 85 tons of bleached sulphite daily and 150 tons of mechanical pulp. It has however concentrated on news print, although equipped to make sulphite wrapping and other light weight papers. It can turn out 120 tons of news print and 85 tons of sulphite paper a day.

Recent Import Paper Decisions

The decisions of the United States Court of Customs and Patent Appeals in the standard news print and side run cases, known as the Heffernan and Crown-Willamette cases respectively have resulted in several decisions involving cases long pending before the lower courts. The decisions rendered are in accordance with the rulings in these two test cases. One case so decided was the first case initiated after the formation of the Import Committee, and involved the importation of a dutiable paper as standard news print. The court has ruled this paper to be dutiable, after the case has been pending in court for nearly five years.

Another important case is that involving importations in the middle west from a Canadian mill, paper sold under a brand name, but claimed by the importer to be dutiable as standard news print. Paper claimed to be standard news print by New Orleans importer held to be dutiable as wrapping paper under the side-run news decision.

Among new cases in which importers are endeavoring to bring in paper at rates of duty lower than those fixed by the appraisers are: Grease proof paper claimed to be free of duty as parchment; board cut into shapes claimed to be dutiable as plain board at 10 per cent instead of 30 per cent as held by appraiser; seven importations of fancy paper held by appraiser to be dutiable at higher rate than claimed by importer; punching paper claimed to be dutiable at writing paper rate held by appraiser to be dutiable as paper not specially provided for at a higher rate of duty; seven importations of envelopes claimed to be free of duty as containers of lithographic materials, held by appraiser to be dutiable as envelopes; eight shipments of machine glazed sulphite held by New York appraiser to be dutiable as grease proof paper claimed by importer to be dutiable as wrapping; seven shipments of vegetable parchment sausage casings claimed to be free of duty.

To Build Pulp Mill at Everett

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., July 5, 1929.—The Puget Sound Pulp and Timber Company, which is a combination of a number of Pacific northwest lumber companies, headed by Ossian Anderson, which recently announced plans for a new pulp mill, has now taken definite steps toward the construction of this mill at Everett, Wash. The option on the water front site which was selected some time ago, has been taken up in full and the purchase price met. The plant will be of 150-ton capacity, costing approximately $2,000,000.

The site comprises more than 25 acres, and is bounded by the Great Northern Railroad on the south and deep water facilities on the west, and is considered one of the most strategic industrial sites on the water front.

Among the accomplishments of the Puget Sound Pulp and Timber Company since its organization, have been the purchase of large acreages of pulp timber in the Monte Cristo basin, the Monte Cristo Railroad which takes in the scenic Big Four mountain resort and the Ricker mill at Lake Stevens.

Right of way is being secured for the railroad having a western terminus at Ebey slough over which pulp timber will be hauled for dumping and rafting and from these storage ponds, towed to the mill site on the water front.

Chemical Paper Mfg. Co. Gets Building Contracts

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 9, 1929.—Contracts for two new steel and concrete buildings to be erected by the Chemical Paper Manufacturing Company between the third level canal and the Connecticut River will be awarded in a few days. The new buildings and new machinery which has been noted in these columns will cost about $500,000 and add to the manufacturing capacity of the box board department which has been increasing rapidly of late.

Paper Mill Activities in Fox River Valley

New Paper Manufacturing Company May Take Over Plant at Kaukauna, Wis., Abandoned by Union Bag & Paper Co., Last Month—Wisconsin Paper Plants Used 1,225,630 Cords of Pulpwood During 1928—New Waxing Machine Installed at Badger Mills

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 8, 1929.—Manufacture of paper may be started by a new company in the plant which was abandoned last month by the Union Bag and Paper Company at Kaukauna, Wis. The latter company moved its mill to Orange, Texas, because the Kaukauna plant was obsolete and too far away from raw material sources.

It is understood that men connected with the paper industry are interested in re-establishing the mill, but their identity has not been made public. The city council of Kaukauna is pushing the proposition in order to provide employment for those who were thrown out of work by the suspension.

Fred C. Boyce Retires

Fred C. Boyce, one of the prominently known men in the paper industry, has retired as superintendent of the Wausau Paper Mills Company, Brokaw, Wis. He served in that capacity for the last 26 years, and intends to take a well earned rest, which will include a trip around the world. Previous to coming to the Wausau mills, he was superintendent of the Falls Manufacturing Company, Oconto Falls, Wis., and earlier in his career served with the International Paper Company at Glens Falls, N. Y.

Mr. Boyce is succeeded by H. L. Scherer, of Portland, Oregon, who has been in the paper industry for the last 25 years. The new superintendent has taken charge and Mr. Boyce is devoting only part of his time to the mill.

Last month when the American Paper and Pulp Mill Superintendents Association held its annual convention at Wausau, Wis., Mr. Boyce was eulogized as the father and first president of the organization. He has been a worker for many years for the good of the industry, and also has been active in church, fraternal and civic circles.

Wisconsin Still Heavy User of Pulpwood

Wisconsin is still both a heavy producer and user of pulpwood, in spite of the gradual shifting of paper mills to other lines than news print and other ground wood varieties. Latest federal figures show that mills of the state used 1,225,630 cords in 1928, the second largest quantity in the United States. Maine is the only state which exceeds this amount.

News of the Industry

Installation of a new waxing machine at the Badger Paper Mills Company, Peshtigo, Wis., has been completed, and the company is now producing this line. The mill was started up recently after being defunct for several years and will operate chiefly in the field of specialties.

Operations at the Wisconsin Tissue Mills, Menasha, Wis., were placed in jeopardy when five new felts valued at $1,200 were stolen after they had been delivered. This left the mill without reserve felts in case of a break. Two were recovered from a field where they had been thrown but the other three have not been located. Thieves were believed to have carted them away in an automobile during the evening hours.

The Nekoosa-Edwards Paper Company, of Port Edwards, Wis., is becoming more of a booster for aviation every day. A separate organization known as the Nekoosa-Edwards Paper Company Airways, Inc., has been formed and has taken charge of the operation of the company's tri-motored Ford cabin monoplane. Capt. L. G. Mulzer, pilot of the plane, is in charge of this subsidiary. Steps are now being taken to establish a flying school as a means of furthering aviation interest. The company is also assisting in a movement to establish a new air mail route which will serve Port Edwards and other paper mill cities in the Wisconsin River Valley.

Two brothers lost their lives within two weeks of each other at the Riverside Pulp and Paper Company, Appleton, Wis. Theodore Lenz was electrocuted accidentally and found dead. Two weeks later Joseph Lenz fractured the lower part of his spine in a fall and died from the effects. Both were comparatively young men.

Recovery seems certain now for Henry Meyer, who was injured badly at the Interlake Pulp and Paper Company, Appleton, Wis., recently. He suffered a crushed chest, broken ribs and a leg fracture when a part of the brick lining of an old digester fell on him while it was being razed.

Smith-Lewis Fibre Corp. Busy

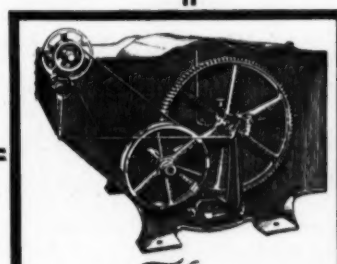
[FROM OUR REGULAR CORRESPONDENT]

LOWVILLE, N. Y., July 1, 1929. — Expansion of the business of the Smith-Lewis Fibre Can Corporation has been remarkable in recent months and the firm organized in 1925 is now rated as one of the foremost producers of liquid tight paper containers and kindred products in the country. The firm took its name from the fact that the Smith interests in Syracuse, including Wilbert L. Smith and Hurlburt Smith, joined with the J. P. Lewis Company, of Beaver Falls, in promoting the manufactured products. Hurlburt W. Smith in addition to being president of the board of trustees of Syracuse University is also a director and member of the executive committee of the Syracuse Trust Company while the brother, Wilbert L. Smith, is president of L. C. Smith & Brothers Typewriter Company. Both are large stockholders in the Smith-Lewis Company which now operates in one of the most modern plants in Northern New York.

On January 1, 1926 the firm acquired the plant of the Beaverland Corporation in Lowville and recently erected an addition which more than doubled the size of the plant. The company also recently acquired the Lowville interests of the Papro Company, manufacturers of milk bottle caps, which now constitutes one of the principal products of its growing business. The Papro Company is now operating at Glenfield. The products of the firm are being sold throughout the country and consist of spiral wound manila cans used for packing ice cream, cheese and dairy products and a higher grade can convolutely wound of solid bleached sulphite stock which can be highly decorated.

Better Railroad Facilities at Fort Edward

FORT EDWARD, N. Y., July 10, 1929.—Extensive changes will be made by the Delaware & Hudson Railroad in the arrangement of their shipping facilities in the yards of the International Paper Company in this village with a view of better serving the local paper plants. At present the arrangement of sidings and switches does not permit satisfactory transportation from the plant of the Amalgamated Paper Company, which recently started operations here. A number of railroad officials spent the past week making an inspection of the company's property and it is understood that they have recommended the improvements. The Amalgamated Paper Company, which is making writing tablets, is rapidly coming to the fore as one of the principal manufacturing establishments hereabouts furnishing employment to over 100 workers. The company moved here from Brooklyn in order to be situated near the International Paper Company, which furnishes all the raw materials.



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Beauharnois Power Project to be Rushed

President Frank P. Jones, of the Beauharnois Light, Heat & Power Co., At Banquet to Celebrate Inaugural, Says Present Plans Call For Development of 400,000 H.P., on St. Lawrence River, Above Montreal—Company Has Sympathy of Governing Authorities

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 8, 1929.—That the ultimate object of the Beauharnois power scheme is much larger than has hitherto been anticipated has been disclosed by Frank P. Jones, president of the Beauharnois Light, Heat and Power Company. Speaking at a local banquet to celebrate the inauguration of the scheme, he said that while present plans call for the development of 400,000 h.p. on the St. Lawrence just above Montreal, the ultimate aim was to develop the full capacity of the river, which would mean 2,000,000 h.p. As the original expenditure is estimated at $60,000,000, the full plans will therefore likely involve an investment of something like a quarter of a billion dollars with a colossal corresponding development of industrial activity in the Montreal area. Both federal and provincial ministers were present at the banquet, and their speeches indicated that the company has the full sympathy of the governing authorities. It was stated that the company has already bought out some 300 farms in preparation for the construction of the thirteen-mile navigation canal from Lake St. Francis to Lake St. Louis. Another project is that when the protective works are extended right across the river a roadway will be constructed on the top, giving access between the north and south shores of the river. In order to reduce the interest charges on the initial expenditure of $65,000,000 to a minimum, work will be rushed to completion with all possible speed. Negotiations are now proceeding for the establishment of large new industries in the district.

Australia To Manufacture News Print

That Australia, which is looked upon as a growing market for Canadian news print, will soon be manufacturing news print of its own is foreshadowed by a dispatch from the Canadian Trade Commissioner in Melbourne. He writes:

"According to recent statements emanating from authoritative sources, developments in the proposed establishment of the pulp and paper industry in Australia have now reached an interesting stage.

"It is stated that the experimental work of the Tasmanian Paper Pty. Ltd., which was incorporated in May, 1927, has been successful to the extent that most, if not all, of the technical problems associated with the manufacture of news print and other paper from Tasmanian hardwood have been solved and that it is now proposed to establish the industry on an extensive scale. To accomplish this a prominent director of the company is now in London with the object of conducting negotiations to that end.

"Tasmanian Paper Pty. Ltd. was originally formed by a strong financial group in Australia for the purpose of acquiring from the Tasmanian Government the cutting rights over 500 square miles of forest in the southwest of the Island State, and to conduct the necessary experimental and investigational work in connection with the industry. One of the leading news print manufacturing firms in England and another prominent British commercial and financial concern have recently acquired share interests in the company which is now being converted into a public company, or a new company formed, to begin operations on a commercial scale. The necessary capital of approximately £2,000,000 for the new organization is said to be practically assured.

"It is generally understood that the Commonwealth Government has promised to assist the new industry by bringing in a bill providing for the payment of a bounty at the rate of £4 ($19.47) per ton of news print manufactured in Australia wholly from Australian timbers. The bill, it is said, will also provide for a deferred duty of a similar amount to come into operation when the payment of the bounty ceases, and a condition of the bounty will be that it shall be paid only if there is an immediate production of 30,000 tons. In referring to the subject in Parliament in March last, the Prime Minister said that it was now quite clear that news print could be produced on a commercial basis from Australian hardwoods, and that he had little doubt that, if the industry were establish, the quantity of 30,000 tons annually would be greatly exceeded. He also intimated that the payment of the bounty would not necessarily be restricted to that quantity."

Urges Building of Storage Reservoirs

LYONS FALLS, N. Y., July 10, 1929.—That the entire North Country would benefit greatly from the construction of storage reservoirs as an aid to the paper manufacturing industry is the opinion of Edwin S. Cullings, chief engineer of the Black River Regulating District Board, who discussed the great amount of power wasted during the recent spring floods. He computes that the energy wasted would produce nearly twenty million kilowatt-hours of electrical energy if stored for use by industrial firms. This is about 60 per cent of the city power plant's production for 1928 and represents a lost revenue of $80,300. Many other plants on the Black River suffered similar losses. Mr. Cullings believes that the development of reservoirs would make it possible to eliminate this annual flood loss.

"The city plant has been used as an example of the loss due to unregulated stream flow," he said, "because of the definite statistics available as to production and sale price. There are on the Black River many other mills and power plants which suffered equally as great losses. Between Carthage and Dexter the Black River falls 480 feet, most of which is developed and utilized by paper mills and power plants, while the head at the city plant is only 26 feet. This loss of energy during high water periods is characteristic of all Adirondack rivers not regulated by storage of surplus water. It can be prevented only by building reservoirs. A start has been made by the construction of the Stillwater Reservoir on the Black River. If available reservoir basins on other branches of the river are developed most of the flood waters can be conserved and the annual flood loss will be eliminated."

Floyd L. Carlisle, of the St. Regis Paper Company, has declared that his firm would like very much to build reservoirs on the Racquette and Salmon rivers but they are held back through lack of permission from the state government. He said that in California, Montana, Ontario, Canada and in the South and West there was never any opposition to the building of storage reservoirs which are vitally necessary in the industrial development of any region.

Cellophane and Vulcanized Fiber Waste

The Bureau of Standards at Washington, D. C., has been requested to suggest a way in which the trimmings from cellophane might be utilized. The trimmings are produced in cutting the rolls and sheets the desired size in the course of manufacture. They amount to a considerable tonnage and are entirely wasted at present. The trimmings are in the form of narrow strips, several feet in length. The suggestion has been made that possibly they could be twisted, and woven into fabrics as is done with paper. The bureau will be glad to receive further suggestions. A similar problem is utilization of waste material from the manufacture of vulcanized fiber products. A means of converting this waste into a salable product is likewise eagerly sought by manufacturers.

Your pumping problems are answered in our Bulletin 114. It completely describes our Triplex Stuff Pumps, Duplex Stuff Pumps and Centrifugal Pumps and gives dimensions and capacities for all sizes. This bulletin also contains a table showing Weights, Volumes, etc., of Liquid Pulp Stock carrying various percentages of Air Dry Stock and a list of average consistencies of stock. Send for Bulletin 114.

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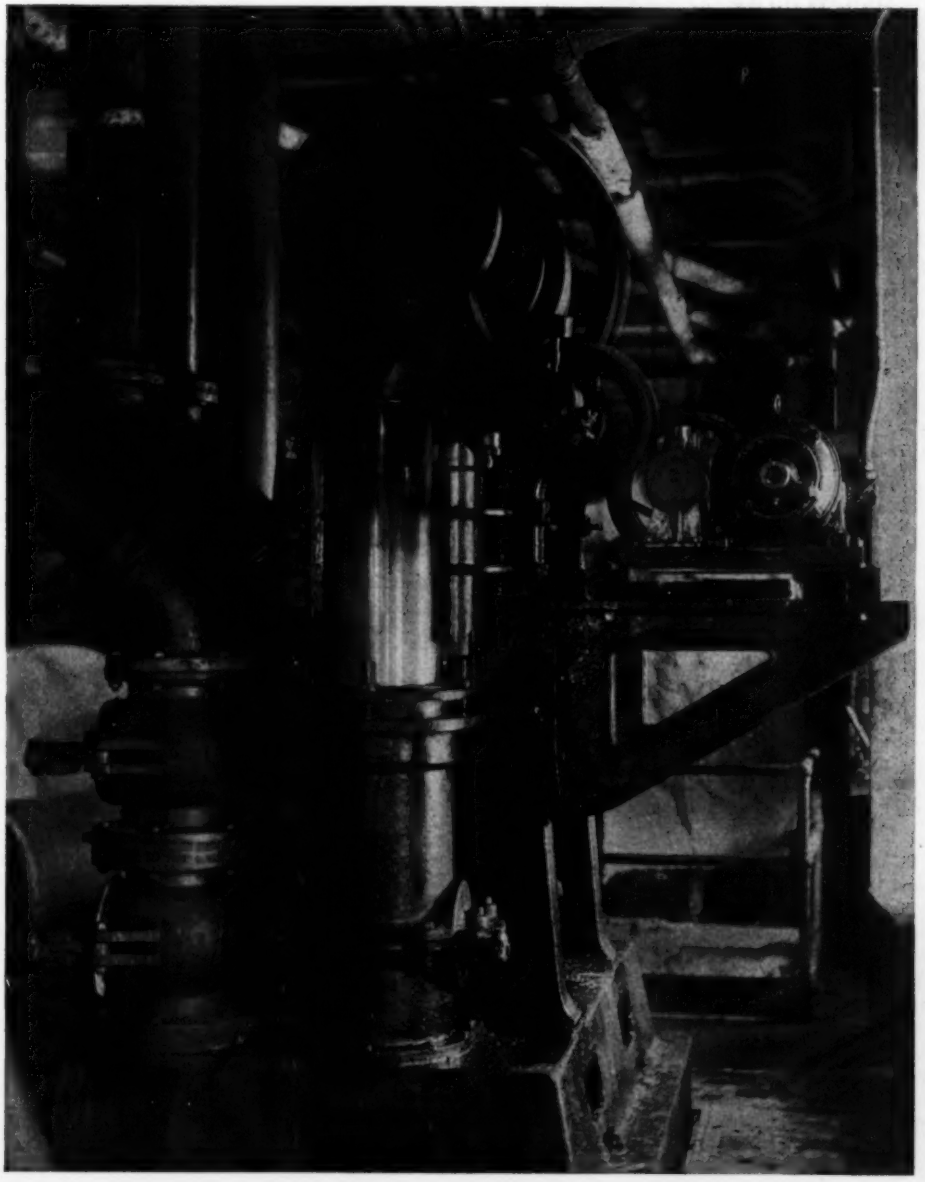

Chicago Paper Market Conditions Satisfactory

Current Business Compares Favorably With Record of Corresponding Period of Preceding Year—News Print Industry In Better Position, With Demand Persistent and Stocks In Hand Limited—Book and Fine Papers Moving Exceptionally Well

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., July 8, 1929.—Hot weather, combined with the holidays, took some of the "punch" out of the past business week in Chicago territory. A number of paper executives availed themselves of the nearness of the Fourth to the end of the week to make a week end affair out of it. Business compared very favorably with last year's Independence week. On the whole business conditions are ahead of last year and underlying causes and results are reported much more satisfactory to all concerned.

One of the bright spots of the week is said to be news print, which is holdin up under the heat quite well. Stocks are said to be well cleaned out, with mills running around 85 per cent. Prices are firm. Book and fine papers are doing exceedingly well considering the season of the year. No change in prices is reported in these lines and a fairly active summer is looked for—an improvement over last year. The board market continues to be active with supply and demand running on a good even basis. Krafts are reported to be falling off slightly but the wrapping paper line as a whole is doing very well.

In the waste paper market dealers have reported continued activity in the lower grades.

Paperboard Industries Summer Meeting

Although the completed program of the Paperboard Industries Association's summer meeting is not yet available, sufficient comment has been heard in Chicago paper circles to indicate that a number of Chicago executives belonging to the association are seriously considering taking the combined vacation and business trip to the Westchester-Biltmore Country Club at Rye, New York, on July 17 and 18. The famed hospitality of this exclusive club hotel, combined with the interest shown in the New Trade Practice Commission activities, constitute an excellent drawing card for attendance. The Carton, Folding Box and Paperboard groups are scheduled for their separate meetings during the two days with a joint meeting as one of the features. However, interest is reported greatest in the activity of the Trade Practice Commission, which received its big impetus at the Chicago meeting last month. Members and non-member companies engaged in the paperboard industry are invited to cooperate in making the Trade Practice Commission a definite forward step in the growth of the industry. Those attending the Westchester-Biltmore meeting are very likely to hear a good deal more about this fascinating and worthwhile subject.

P. J. Massey Addresses Paper Salesmen

Activities in the Chicago Division of the Salesmen's Association of the Paper Industry closed with an excellent meeting held the last Monday in June at the Hamilton Club and featured by the appearance of Peter J. Massey, vice president of the Seaman Paper Company. Mr. Massey was, until recently, an executive of the W. F. Hall Printing Company. He is a keen student of paper in its relation to printing and his remarks on this important subject were extremely fitting for the closing meeting. The program committee of the Chicago division, under the personal direction of Harold Knott, president, is already laying plans for the first meeting which comes on the Monday following Labor Day and for subsequent meetings which are expected to even surpass those of this season. Jim Coy is working hard to get Mr. Whaley, of the Whaley-Eaton service, at the big Fall meeting of the Salesmen's Association held in conjunction with the Fall meeting of the National Paper Trade Association.

In the meantime Tom Donahue and his golf committee have called everybody's attention to the next golf event slated for the Elmgate Country Club on July 18. A big attendance is expected.

News of the Trade

It is reported that the Brown Paper Goods Company of Chicago has affiliated with the Glassine Bag and Novelty Company of Rhinelander, Wis., and that all of the machinery for the manufacture of this product has been moved from the Chicago plant to Rhinelander. They are to be installed into the new unit which was recently completed and these seven machines plus the six already located at Rhinelander are expected to provide one of the most adequate units for the manufacture of bags.

The July 1 mill price list of the West Virginia Pulp and Paper Company, of Westvaco Brands sold direct from the manufacturer's warehouse, reached offices of Chicago buyers this week. Prices and description of 24 lines are included in the price pamphlet. The next issue of the mill price list will be published in October.

An interesting booklet has been sent out by the Warren Manufacturing Company describing their line of Riegel's Jewel Brand Glassine papers. The booklet is in the form of a portfolio containing samples of glassine papers together with information as to the uses of each grade. The text is written to act as a genuine aid in solving packaging problems.

Chicago representation of the S. D. Warren line is continuing to feel the valuable influence of the Warren direct mail campaign tending to asist in opening up overlooked markets for printers. One of the newest of this direct mail series, "Are You Getting Your Share of Reprint Business," is as helpful as its predecessors in helping the printer to round out business which may have been heretofore overlooked.

Boston Paper Business Seasonal

BOSTON, Mass., July 8, 1929.—"Regular summer business" is the practically universal report in the Boston wholesale paper market, in both coarse and fine grades. Indications of a good fall demand are bright.

Many of the board mills and box factories resume operations this week after the vacations. For any establishments, including dealers' offices which remained open last week, the period was somewhat broken on account of the holiday and the fact that other concerns were closed. A little larger volume of orders in both board and boxes is expected. Price levels remain the same.

The market for old papers and rags is in the midst of mid-summer dullness. Slight advances have been made in some grades, more on account of scarcity of supplies than demand, according to a member of the trade. Waste papers are said to be in a depressed condition, and no improvement will be looked for until fall. Some mills, however, begin to buy their supplies in August because they can secure them for less than later in the season when several manufacturers come into the market at the same time.

Old kraft is possibly an exception to the inactivity as a considerable quantity has been purchased lately, and the tendency is upward. Ideas vary in regard to No. 1 foreign gunny bagging, some quoting a flat 1.50 and others 1.50 to 1.75. New and old domestic rags are unchanged in price. In foreign rags, lace curtains have been marked up to 5.00 to 5.12½ from a former range of 4.75 to 5.00 and new checks and blues to 4.25 to 4.60, from 4.25 to 4.50. In old linsey garments, some are quoting 1.85 to 1.90 and others as high as 1.97½. In the twine market, hard fibers are generally lower.

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Paper Mills Fairly Active In Pennsylvania

Steady Demand Experienced For Various Grades of Book Paper From Publishing and Printing Houses—High Grade Writing Papers, Bristols, and Plated Papers In Excellent Request—Board Manufacturers Continue to Curtail Operating Schedule

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., July 8, 1929.—Despite general lack of interest in the standard grades of paper a few dealers kept up shipments throughout the early week as orders for specialties for hot weather and vacation outings, as well as festive decorative and utilitarian paper goods, mounted in the demand made for Independence Day celebration. Mill representatives who cover Philadelphia report a livelier interest on the part of the trade in stocking for the Fall. As a result wholesalers of paper and direct mill agents are enjoying a fairly gratifying amount of orders which will keep the manufacturers active for the remainder of the month. Attention, of course, is being given to repairs of plants and the usual summer overhauling, so that local mills will not be able to go ahead with Fall operations before mid July. Distant manufacturers who now canvass local distributors for their late summer stocking, however, have already sufficient orders placed to meet production schedules of the normal seasonal volume. Kraft papers, builders supplies, and the cheaper grades of writing papers, are not as active as might be expected at this time, in so far as mill contracts are concerned, nor is there the usual amount of buying in the distribution houses, so that dealers are limiting their needs to immediate requirements pending a livelier market all around.

Board mills continue to curtail operations, especially those linked with larger converting plants in the way of fiber and other containers of the bulkier types. Box boards are fairly active, as the paper box manufacturers enter the usual summer preparation period for the coming Fall, and holiday needs in fancy boxes. The better grades of paper board are mostly active, for it is this class of board that enters into the production of fancy boxings rather than the cheaper lines, that show tendency to lag. There has not been the expected upward revisal in paper boards, prices holding to the levels of the past six months, the lowest in the post war years.

Various grades of book paper consumed by contract buyers in the publishing and printing trades continue to occupy the attention of the manufacturers of these commodities. Mill representatives report a steady demand in wholesale quantities among the larger printing and publishing houses. Cover papers are fairly active but show signs of lagging interest as might be expected at this season. High grade writing papers are in the active list, along with bristols and plated papers, and fancy finishes in writing papers for social stationery and papeteries. There is keen competition among the manufacturers of manilas and the cheaper grades of writing papers, as orders are hard to land.

Reviving interest in the paper stock market was evidenced as mills sent in inquiries on prices of some of the better grades of waste paper which have been laggards the past few weeks but which were most active at this time last year. Manufacturers, while not placing heavy orders, are apparently more interested in these grades, as the summer weeks are being given to the operations of Fall stocks. The cheaper grades still continue to lag with no price changes, either upward or downward, although prices are likely to be revised on the better grades within the next fortnight, as accumulations are nil, and as demand grows, values will increase, so the dealers state.

Fine Paper Dealers Discuss Net Profit Control

At a special meeting called into session in the Manufacturers Club, the members of the Fine Paper Division of the Philadelphia Paper Trade Association were informed of the system of net profit control as it has been adopted by an associate of the Baltimore trade, Lee Mahon, of B. F. Bond & Co. There were 45 members of the association present. Mr. Mahon told in detail how his concern had developed a system which is carried out in its paper business of estimating the cost of conducting business and keeping expenses down to a minimum and so raising and controlling profits of the Bond company. He was introduced by Vice President W. S. Wilcox, of the Wilcox, Walter Furlong Company, who introduced the Baltimorean with an advance word of gratification that the dealers had the opportunity of receiving from their Southern associate first hand information on profit control as successfully carried on in the Oriole City paper house. He was followed by President Simon Walter, who voiced his appreciation of the interesting and informative address, and thanked Mr. Mahon on behalf of his associates, and the organization, for the helpful advice.

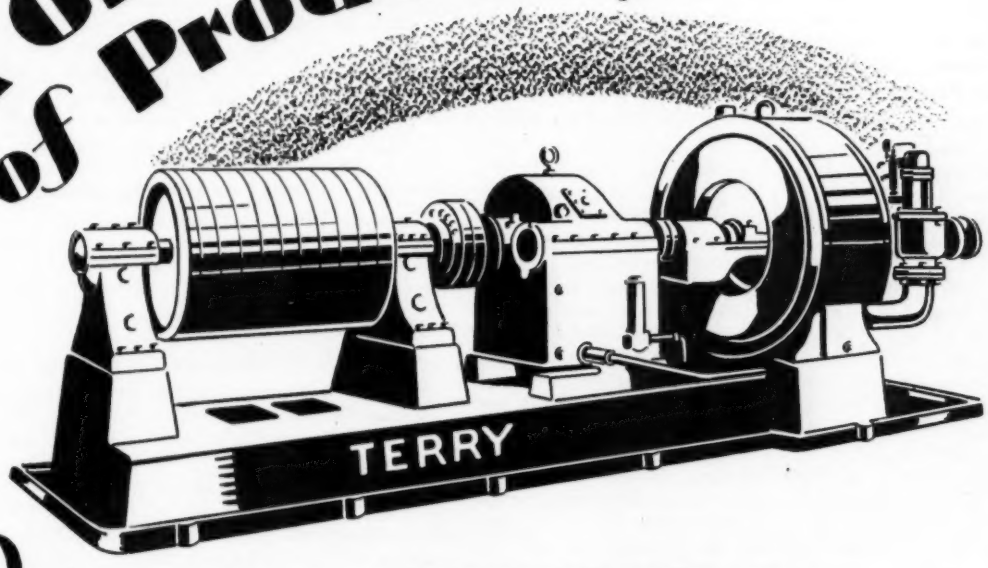
E-Z Opener Bag Co. Introduces New Product

The E-Z Opener Bag Company, which is now known as the Gulf States Paper Corporation, with mills located at Tuscaloosa, Ala., introduced to the Philadelphia trade during late June an entirely new product in the local kraft market. It is a product of an exceptionally fine brown kraft which may be used for converting purposes as well as for wrapping. The new kraft is a durable and good looking paper. Samples of the new product were distributed among the dealers by Representative Charles who travels this territory for the manufacturers. Shipments of the new line, however, are being made directly from the mills where orders have been secured and those placed by the Quaker City dealers indicate its immediate success among the wrapping paper dealers and converting consumers.

George W. Ward Announces Business Innovation

George W. Ward, head of the D. L. Ward Company, stated last week that his firm is planning to remove to newer and modern quarters in the building now under construction at 401 North Broad street. The structure which the firm will occupy is to be known as the Terminal Commerce Building, a subsidiary of the Terminal Warehouse Company, under the control of the Terminal Commerce Building, Inc. The Ward Company will be the first lessee to sign up for the mammoth new structure which is being constructed so as to enable business houses to confine to single site and space all branches of the business, including executive and sales offices, show room, warehouse, garage and freight station under a single roof, and so solve the high cost of distribution. This building gives the Ward company a site in the heart of the city central business district, with all conveniences of railroad sidings and shipping services, as the structure is being erected near the Reading Railroad and Pennsylvania Railroad tracks and stations, with direct truck and garage services beneath its foundation, where 600 cars can be accommodated, and loading platforms for 140 trucks. It is a unique type of building for the Quaker City, and is the first of its kind to be erected here. The Ward company will be provided with high speed elevator service, incinerator plant, spacious warehousing rooms, modern offices, inside loading and unloading platforms, and floor space that will cover an entire city square. The building occupies 32 acres of ground and is the most comprehensive structure in the world. It is eighteen stories high and is within four squares of City Hall. The D. L. Ward Company is one of the largest of local paper houses, mainly devoted to fine grade but also conducting a cordage and wrapping paper division. It was founded by Edward Buckley and on his termination of business under financial difficulties the paper house passed to the control of D. L. Ward, who incorporated the D. L. Ward Company with his own concern, formerly Wilkin-

A Greater Variety of Products!



With the TERRY Paper Machine Drive

The Terry drive can be furnished to operate over any speed range up to 1 to 10. This permits the production of a greater variety of products. High paper speeds or low paper speeds can be secured without any change in the driving equipment other than a simple governor adjustment. The drive can be run at whatever speed is most suitable for the stock.

Write for a copy of the new bulletin describing the many advantages of the Terry Drive. Ask for Bulletin S-899.

The Terry Steam Turbine Company

TERRY SQUARE, HARTFORD, CONN.
OFFICES IN PRINCIPAL CITIES

Steam Turbines · Gears · Shaft Couplings

T-1036

son Brothers, which he bought out. The Ward company was organized 35 years ago, the present head of the firm and son of the founder, George W. Ward, entering the business twenty years ago.

In the new quarters will be distributed the S. D. Warren Company's standard printing papers, the Hammermill papers, the products of the United States Envelope Company, the Scott Paper Company lines, the Lily cups, C. H. Dexter tissues, the Sampson Cordage Company's twines and sash cords, the E. H. Fitlet Company twines and ropes and the Claremont wrapping papers. A prolonged tour of the various paper houses of the Middle West and the Great Lake Region was begun during the past week by the head of the D. L. Ward Company, President George W. Ward. He will remain in the Western section for several weeks to come.

Scott Foundation For Advancement of Horticulture

A memorial to Arthur Hoyt Scott, recently deceased head of the Scott Paper Company, of Chester, Pa., was announced during the week by the faculty of Swarthmore College, Swarthmore, Pa. The memorial will be known as the Arthur Hoyt Scott Foundation, which will be devoted to the advancement of horticulture along the lines carried out more than 100 years ago by John Bartram of Philadelphia, who established the first botanical gardens in America in this city at what now is known as Bartram Park. It is predicted that the Foundation will foster the first arboretum and public gardens in America to be established along Crum Creek. A total of $76,100 has been allotted by the Scott Foundation at Swarthmore College for the development of this plan. Three definite purposes motivate the Arthur Hoyt Scott Foundation: The Founding of the Arthur Hoyt Scott Arboretum in the Crum Creek Zone; the development of floriculture through the establishment of the Chair of Horticulture in Swarthmore College and the promotion of interest in better gardens through the establishment of an annual prize of $1,000 and a gold medal to the institution or individual who has rendered the most outstanding service in promoting a greater interest in "Better Gardens" and "Love of Nature." The late president of the Scott Paper Company was an alumnus of Swarthmore and the Foundation was established under his will and its provision for the financial support of this work.

G. A. Bisler Estate Appraised

An estate appraised at $1,167,044, exclusive of real property, was left by Gustav A. Bisler, Philadelphia paper box manufacturer and head of the G. A. Bisler Company, who died last January and whose inventory was filed last week with the Register of Wills. The will provides for a bequest of $20,000 to the Presbyterian Hospital. The residue will be distributed among his heirs, a son, Gustav A. Bisler, Jr., in the paper box business at 12th and Brown streets, and three daughters. The estate includes 3,845 shares of G. A. Bisler Inc., of which he was head and founder, valued at $384,500. The late head of the Bisler corporation was formerly associated with the Philadelphia Manufacturing Company, manufacturers of paper board, which operated mills in the Manayunk district, and which a few years ago were consolidated with the Container Corporation of America and are now owned by that corporation.

A. E. Whiting, Jr., Killed in Auto Accident

Among the tragedies of Independence Day was that of the death in an auto accident of Allen E. Whiting, Jr., son of Allen E. Whiting, head of the Whiting Patterson Company, paper distributors and manufacturers of envelopes and social stationery, 320 North 13th street. The young man, a recent graduate of Cambridge University, was killed early on the morning of July 4 while returning from a dinner dance. His automobile swerved from the road and young Whiting lost control of the car as it ploughed about 25 feet into a shallow ditch and was struck with such force against a tree that the driver was crushed while at the wheel, dying immediately. The car was struck with such force that it was badly bent in the frame. His companion, Dawson Buxton, however, escaped serious injury and was able to walk to his home nearby. His father, President Allen E. Whiting, who was in New England at the time of the tragedy, was notified by wire and immediately returned to Philadelphia. His mother is in Europe and all efforts to reach her by cable were futile. The young man was unmarried and was connected with the brokerage offices of Townsend, Whelen & Co., of this city. He was a distant relative of William F. Whiting, of the Whiting Paper Company, Holyoke, Mass., who succeeded Herbert Hoover as Secretary of Commerce in President Coolidge's Cabinet.

N. A. Considine Made Poor Richard Director

President Norbert A. Considine, of the Paper House of Pennsylvania, 32 North 6th street, was elected a director of the Poor Richard Club, last week to serve in that capacity for the next three years. He has long been identified with the Poor Richards, having been a former vice president, and has been a leader in the activities of the advertising fraternity of the Quaker City as a representative of the paper trade association and its allies in the graphic arts.

United Paper Board Extends Staff

There has been added to the Philadelphia offices of the United Paper Board Corporation in the Bourse, another representative who will cover the Quaker City trade. He is James E. Purvis, formerly with the Board Mill Division of that corporation and for the last year with the Wabash Coating Mills, Wabash, Ind.

W. J. Deubener Gets Patent on Bag

Walter J. Deubener, head of Deubener's Shopping Bag, Inc., Indianapolis, Ind., under date of May 21, 1929, was granted a patent on a shopping bag. Mr. Deubener in part describes the new bag as follows:—

"An important feature of the invention is in providing a shopping bag which can be sold for a very reasonable price and yet giving an appearance to the bag of an attractive nature. A feature of the invention resides in embossing the paper and decorating the same on the face of the paper which decorates the outer surface of the bag automatically as the flat sheets are fed through the machine and in forming the same into a bag as it passes on through the machine with an outer decorative finish and embossed body so as to decorate the entire outer exposed surface of the bag and providing a shopping bag in such a nature as to have an attractive and appealing finish over the surface and embossed into the body of the same.

"The invention includes the method of making a shopping bag with a decorative outer surface and an embossed finish in the body of the paper or material making up the shopping bag so that in an economical manner a very attractive bag can be provided which may be used for shopping purposes. This method includes an automatic means of running the blank flat sheet paper through a decorating and embossing means and then passing the same through the apparatus adapted to fold and glue the paper into the shape of the bag with the decorated face appearing on the outside of the same. This method is carried out rapidly and the decorating and embossing means is adapted to be synchronized with the bag making mechanism so that the bags come out uniformly properly decorated and embossed over the entire outer surface. This is a very important feature in the development of any economical shopping bag which is made preferably of paper and yet which is adapted to stimulate or have the appearance of a leather bag. My method is carried out economically otherwise it would not be practical to make up these bags with a decorative face and finish and it is in providing a new article of manufacture in this manner which is the primary feature of the invention."

Finnish Paper Production For 1928

The net paper production of Finland last year aggregated 305,000 metric tons as against 282,000 tons in 1927. Of the 1928 output, 215,666 tons were produced in the mills of the Paper Mills Association. News print accounted for 130,009 tons of the association's output last year as compared with 120,073 tons in 1927.

The Deciding Vote.

A North Carolina preacher, just before election, said to his congregation, "You ask about this Eternal Life. Now there are three votes going to be cast on your Eternal Life; the Lord, he is going to vote for you; the Devil, he is going to vote against you; and you have got the deciding vote yourself."

It is much the same way about Beating Engines. Undoubtedly you ought to install Dilts New Type Beaters in your mill. Your beatermen and papermakers, your salesmen and customers, your progressive stockholders and your banker, they will all vote for them; your non-progressive stockholders (the "dead wood" in your organization) your competitors and our competitors will vote against them, but you have got the deciding vote yourself.

Eternal Life and Beating Engines are both serious subjects, and we hope you will cast your deciding vote in the right column. We are especially concerned about your vote on the Beating Engines, and you certainly should be—because "your paper is made in your Beaters."

VICE-PRESIDENT

DILTS MACHINE WORKS, INC.
Fulton, New York

Ontario Paper Mills Operating on High Level

Activity Extends to Practically All Branches of Paper Industry, From News Print Up—Fine Papers In Exceptionally Good Request—Book Paper Manufacturers Booked Well Into Summer With Orders—Excellent Demand Experienced For Coated Stock

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 8, 1929.—Although the holiday season is pretty much in full swing, the paper trade in Ontario continues in a healthy condition, both from a manufacturing and distributing standpoint. There is good business passing in the mill end of the trade and the vacation period promises to have less adverse effect on the wholesale trade than it had in former years. The jobbers are undoubtedly doing well under a sustained demand for nearly all classes of paper. The fine paper section, particularly, is enjoying good business and there has been some improvement in the coarse paper section. On the other hand it is stated that the paper bag department of the paper industry is not in a satisfactory condition and that sales are being affected by both outside and inside competition. In fact the paper bag situation in the Dominion generally has never, in recent years at least, been in a sufficiently organized condition to afford proper protection to those engaged in it. Consequently the paper bag trade has not gone hand in hand with wrapping paper in the improvement the latter has been recording. Kraft wrapping, particularly, continues in strong demand, and that paper, for whatever use, is finding a ready market both at home and abroad.

The mill trade is operating on a high level and activity extends to all branches of the industry from news print up. Mills making book papers find themselves booked well into the summer with orders, and catalogue, direct mail and other advertising consumers, are making big requisitions for all classes of fine papers. This includes coated stock, for which there is a very good demand considering the presence of the holiday season. The writing, bond and ledger machines, are all running quite full and consumption has fallen off but little during the summer so far. The paper converting trade is also on a much better basis now and one hears less complaint as to quiet conditions. In the light weight paper section there is some complaint as to outside competition in tissues and toilets but Ontario manufacturers state that business is good, nevertheless, and that they are turning out and disposing of satisfactory tonnages. Rag and paper stock dealers are busy and prices are holding firm.

Visiting Northern Paper Mills

The Hon. Charles McCrea, Minister of Mines, has left on an inspection tour of Northern Ontario paper and pulp plants and mines, over which he has temporary jurisdiction owing to the absence of the Hon. William Finlayson, Minister of Lands and Forests. The tour will include visits to Sudbury, Blind River, Sault Ste. Marie, Port Arthur, Fort William, Kenora, Fort Francis, Sioux Lookout, Hearst, Kapuskasing, Cochrane, Timmins and various centers along the T. and N. O. Railway as far south as North Bay. According to Premier Ferguson the visit is one of departmental inspection during which many of the pulp and paper plants will be surveyed.

Summer Operations in Thunder Bay District

More companies are engaged in the woods in north western Ontario this summer than in previous years. Spruce and balsam can be peeled in June, July and part of August, and advantage is being taken of this by the Nipigon Lumber Company, of Nipigon, which has a considerable number of camps in the Nipigon district this summer. At Cloud Bar, on the north shore of Lake Superior, Randall, Renshaw, Stevenson and several smaller jobbers are operating peeled pulpwood camps. The E. Bell Company, of Fort William, at Sturgeon Bay, have a big summer camp for peeled poplar, one of the first contracts of the kind secured in that district. An almost unlimited supply of poplar can be had all over northwestern Ontario. This is the most rapid-growing tree in this part of the province, 25 years growth producing marketable pulpwood. A great many homesteaders and owners of veteran claims are also engaged in summer operations and in a few years time, when all the paper mills at Port Arthur and Fort William are working to the limit of their capacity, summer operations will be expected to supply a part of their raw material At present all the peeled pulpwood being cut in the district is for export. The Hammermill Paper Company have loading camps at different parts of the north shore of Lake Superior, to which the peeled pulpwood cut last summer is being towed and loaded on freighters with a loading equipment of the endless chain type.

Corrugated Box Increases Production

Removal of all machinery, equipment and paper supplies to the new plant at Leaside, near Toronto, has now been completed by the Corrugated Paper Box Company. For some time past manufacturing has been in process at the Leaside factory, and it is stated that although there still remain a few smaller machines to erect, production has already exceeded the normal capacity of the old plant. The opportunity to overhaul the older equipment afforded by the necessity for transference of operations was utilized to the full, and additional machinery has also been purchased and installed at Leaside. The immediate result of this policy has been a considerable increase in tonnage production on a more efficient manufacturing basis. Sales are materially ahead of those for the same period of last year, and as the company is now in a position almost to triple output, there will be no necessity to turn down orders as has been the case at times hitherto. The company is fortunate in having completed removal just prior to the yearly peak demand for corrugated and fiberboard products, and for this reason a substantial rise in earnings is expected for the current fiscal year. The volume of orders is such that full production can be maintained for some months ahead, and warrants the belief that manufactured tonnage in 1929 will double 1928 figures.

Manitoba Paper Co. Is Extending

The Manitoba Paper Co. is making arrangements to instal additional grinders in its plant at Pine Falls, at a cost, together with the buildings which will house them, of about $250,000. C. C. Irvine, the general manager, reports that operations have already been commenced on the excavation and concrete work and this, it is anticipated, will be complete by October. While the increased grinder capacity does not increase the capacity of the mill proper, it balances the entire plant and will permit of the mill operating at full capacity whenever that is necessary, the grinding capacity of the original plant having been somewhat less than the mill capacity.

Dusting of Forests Proves Success

Complete success has attended the experiments in the aerial dusting of forests in Northern Ontario in the fight against the spruce budworm plague, according to Flight Lieutenant N. C. Forbes, who has just returned to Ottawa after completing the first operation conducted from the new giant tri-motored plane purchased by the Dominion Government. Flight Lieutenant Forbes, flying low over the trees, dusted a large area of infested forest land around Westree, Ont., while Dr. J. M. Swaine, Associated Dominion Entomologist, who observed the experiment from the ground, reported that it had been a marked success. Other experiments will now be conducted in Quebec province. It is stated that these successful experiments will eventually mean the

"MONKEY GLANDS" for OLD EQUIPMENT

It is amazing to see the results that can be achieved by specialists, aided by modern facilities, in rejuvenating paper mill equipment. Antiques, apparently at their last gasp, are given a new lease of life; worn out devices started on a new career of profitable production, modernized in appearance and performance; crippled machines restored to full health "in a jiffy". Seeming miracles of rebuilding and repairing are all in the day's work at Bagley & Sewall's—naturally enough, considering the background of a century of experience, the expert staff of skilled specialists, understandingly trained, and the resources of an immense, adequately equipped plant. Let us demonstrate.

We'd like to tell you more about this service—ask us

The Bagley & Sewall Co.

Watertown, N. Y.

saving of millions of dollars of pulp and timber every year which would otherwise be destroyed by the ravages of the budworm.

New Brunswcik Peeling Season Now On

The pulpwood peeling season in New Brunswick is now under way and will continue until the full moon of August which falls on the 20th of the month, and is accepted by those in the business as marking the end of the period during which the bark peels readily from the logs. After that date the drying sap makes the process impossible except under unusual conditions. The larger operations in the pulpwood areas this season are in the north of the province where the output is taken largely by provincial plants. In the central and southern parts the operations are curtailed because of depressed markets, operators preferring to wait for better prices. An exception is made for particularly good areas of spruce the wood from which is desired for the manufacture of rayon or other artificial silk. Water shipment of the wood peeled last season is being carried on from ports on the North Shore, mills in the vicinity of Philadelphia taking quantities from Kent County and other sections for the artificial silk industry.

Seeks Timber Problem Solution

An interesting visitor to Toronto is Robert Dunlop, M. B. E., Pietermartizburg, Natal, South Africa. Mr. Dunlop, who is also secretary of the Birman Woods, Limited, is also secretary of the Wattle and Timber Growers Association of South Africa and of the Chamber of Commerce of Natal. He is investigating the timber and pulpwood resources of the Dominion and another object is to seek a by-product of hardwoods, the lack of which is creating a big economic loss in his country. "In Canada," he said, "your valuable timber—softwoods—are being used for pulpwood. Our problem is to find a use for the hardwood of short fiber. Fortunately we have timber such as eucalyptus which has made remarkable progress in South Africa. In seven years these trees grown to a height of 70 feet, or an annual increment of 10 feet almost unbelievable until you remember that the rainfall averages 39 inches a summer. This wood, of longer fiber than the wattle, when mixed with the latter, produces a good pulpwood. In Natal we have the advantage of china clay which is a most suitable filling for use with pulpwood in the manufacture of cardboards and heavy wrapping papers."

Kenneth Nichol Passes On

The paper trade in Toronto were shocked this week to hear of the death of Kenneth Nichol, for the past several years sales manager in Toronto for the Interlake Tissue Mills, Ltd., at Thorold, Ont. The late Mr. Nichol, although only 29 years of age, had had mill experience at the company's mill and had won rapid promotion to the position of sales manager. A few weeks ago he was the victim of an automobile accident but it was thought that he was recovering from the effects of the smash when he suddenly expired from a clot of blood on the lungs. The late Mr. Nichol, who served in France with the Royal Air Force during the war, had a wide circle of friends who will regret his demise.

Notes and Jottings of the Trade

The Wilkinson Pulpwood Co., Ltd., which is a subsidiary of the Thompson-Heyland Lumber Co., Stair Building, Toronto, has been granted a provincial charter with an authorized capital of $40,000 and head office in Toronto. James Thompson is president of the new company.

Mrs. Kate Nowerman, Dorion, Ont., woman pulpwood operator in the Thunder Bay district, reports that she took out 200 cords of pulpwood during the past winter. Next winter she expects to take out about 500 cords. There is a good demand, she says, for poplar and balsam this season.

In order to centralize their many different offices in Quebec City, Price Bros. & Co., Ltd., well-known lumber and pulp manufacturers, will erect a substantial office building. It will be 246 feet high, having a depth and frontage of 80 feet. Fourteen stories will be the height and it will be built entirely of stone on all sides. The structure has been so designed as to fit in with other outstanding landmarks in the ancient city of Quebec. The building will contain a special ventilating system, supplying, exhausting and humidifying of offices with cool fresh air.

Provincial Paper, Ltd., head office Toronto, has just issued a very attractive sample book of their new Sachem Covers. This is the first time this type of covers has been produced in Canada and the claim is made for them that they epitomize the emotional value of color in creating the right atmosphere and impression. In the book of samples the specimens shown suggest a multitude of uses in a variety of pleasing color effects. The company has a coast to coast distribution.

A. E. H. Fair, who for the past couple of years has been with Arthur D. Little, Inc., at Cambridge, Mass., and whose work was largely in connection with development of the technical grades and specialty papers, has resigned his position with the American company and will come back to the Lybster mill of the Alliance Paper Mills, Ltd., where he will take charge of the fine paper production. Mr. Fair, although a young man, is known widely as one of the most expert paper manufacturers in Canada, he having got his early training with the old Lincoln organization which he has now rejoined. Mr. Fair was also vice-president of the Windsor Locks Mills, Inc., and while there he developed an entirely new type of dietlectric tissue. This paper has been well received by the trade in connection with the manufacture of radio receiving sets.

Col. C. H. L. Jones, formerly of the Spanish River Mills at Sault Ste. Marie, Ont., and now president of the Mersey Paper Company, has purchased from Henderson & Innes, Liverpool, N. S., a typical 75-foot Nova Scotia fishing schooner, which he will convert into a private yacht for summer cruising along the Atlantic coast. The vessel is one of the trimmest and fastest of the Nova Scotia fleet and was built in 1925.

The Lincoln Division of the Alliance Paper Mills at Merriton, Ont., has started up again after having been down for several weeks while extensive repairs and renovations to machinery and buildings have been in progress.

The annual golf match between the mills and the paper merchants for the Lincoln cup took place in Montreal last week and was won by the mill men. The players were guests of the Rolland Paper Company at Laval Sur de Lac before and following the match.

Charles Kay, of the Columbia Paper Company, Vancouver, and Fred Smith, of Smith, Davidson & Wright, Vancouver, were business visitors in Toronto last week.

David F. Robertson, manager of the Canadian Paper Board Association, was presented with a cigarette holder by the Board Section a few days ago on the occasion of his retirement from the position in favor of Frank Thorne, of Price Bros. & Co. Mr. Robertson has been the manager of the association for six years and has given valuable services to the organization.

Alliance Paper Mills, Ltd., head office Toronto, has arranged to open an office in the Shaughnessy Building, McGill street, Montreal, with J. G. Emery as resident representative in charge.

The factory and office staffs of the Dominion Paper Box Company, together with friends, and numbering over 300 people, held their annual picnic last Saturday at Huttonville, near Toronto, and enjoyed a full day and evening in games, athletic contests and a general good time. The company supplied a considerable portion of the picnic fare together with prizes for the softball, tug-of-war and other contests, and there was an orchestra for dancing in the evening. The party was transported to the picnic grounds by T. T. C. buses and the event was staged to the accompaniment of the best of weather.

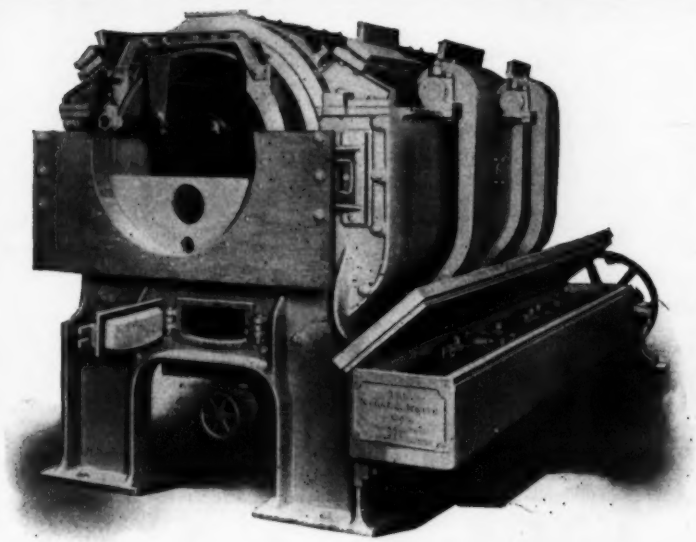
Transferred to Standardization Dept.

HOLYOKE, Mass., July 9, 1929.—George Callahan of the Department of Tests of the American Writing Paper Company, Inc., for the past three years has been transferred to the Standardization Bureau of the concern and will now be located in Philadelphia.

M&W ROTARY SCREEN

FOR FOURDRINIER AND CYLINDER PAPER MACHINES

QUICK CHANGEOVER



QUICK WASHUP

Hours Saved on Changeover

A paper machine is too costly an investment to be kept idle while the screen is being washed up and plates changed. The "M & W" Rotary Flat-Plate Screen can be changed over while the paper machine is being washed. With the end washout doors open and a hose playing inside, the screen is flushed clean in a few minutes. Its cleanness can be seen by looking in.

The plates are standard size, 12 x 43 x 5/16 inches, flat. They are clamped to the cylinder, and can be changed in an hour.

Compare this with present performance in your mill.

Paper mill executives seeking the cleanest paper at the lowest screening cost will find many other interesting features in "M & W" Rotary Flat-Plate Screens.

A catalog fully describing them will be sent on request.

THE MOORE & WHITE CO., NORTH PHILA. STATION PHILADELPHIA, PA.

PAPER · MACHINE · BUILDERS

Seventh Annual Mill and Merchants Conference

The Seventh Annual Mill and Merchant Conference was held at the Hotel Griswold, New London, Conn., on June 27-29 inclusive. The Crocker-McElwain Company and the Chemical Paper Manufacturing Company were hosts to a gathering of one hundred and eighty of the leading paper dealers of the United States, many of whom were accompanied by their wives. The program opened with dinner on Thursday evening followed by an informal reception of guests and dancing in the ballroom.

On Friday morning C. A. Crocker opened the business session with a very interesting talk on the paper industry, past, present and future. He mentioned that twenty-five or even fifteen years ago a meeting of distributors from all parts of the country was something unheard of. In those days it was a question of being able to buy at the lowest price and sell at the highest price, and the man that could buy the lowest usually was the one who came out on top. Fixed prices were unknown and a general interchanging of ideas was unbelievable. He stated that the best way to show the progress in the paper industry was by contrast with the past. Of course he could tell nothing definite of the future but he did predict that the future looked very bright and promising.

Policy of the Two Mills

J. E. Holmes, vice-president, gave a very interesting talk on the policies of our two mills and pointed out that the Crocker-McElwain Company and the Chemical Paper Manufacturing Company had the chief objective of serving the paper trade honestly and conscientiously. He elaborated on the policies of manufacture, distribution, service from both the mill and the Chicago Warehouse, etc.

The next speaker on the program was E. C. Tucker, vice-president in charge of production. He explained that it is necessary to keep up to date in order to keep in business. He then told of the new paper testing laboratory installed at the Crocker-McElwain mill, of the contemplated change in the engine room at the Crocker-McElwain plant and also of the new cylinder board mill that they were building in connection with the Chemical Paper Manufacturing Company.

Advertising for 1929 and 1930

Advertising for 1929 and 1930 was outlined by Edson S. Dunbar, advertising manager for the two mills. He divided his talk into five parts. First, the best advertising the mill could do is to put the value into the sheet. He explained that this had been done and that point number one in the advertising campaign was very well taken care of. Second point was the Mill Data Book which has just been issued. This was planned to benefit each man in the office of the distributor who has the need of it more than anybody else. The Mill Data Book gives complete information on all of the regular lines as well as the special making requirements at the two mills. Point number three in the advertising was the matter of bringing paper salesmen to the mill. This has been very effective during the past year and the mills intend to continue bringing salesmen to the mill during the coming year. Point number four in the advertising was the very important subject of sample books. Mr. Dunbar pointed out that since the last conference in September ten new sample books have been brought out and many more were contemplated during the remaining months of 1929 and also in 1930. The last point in the advertising campaign was the broadsides and dealer helps, inserts in direct advertising, specimen books, bulletins for the salesmen, etc. These are all arranged on a definite schedule so that the paper salesmen can get the most good from the advertising.

Discussion on Papers That Print

Following Mr. Dunbar's talk the meeting was thrown open to a general discussion on the "Papers That Print." Gordon Blanchard, sales manager of the Crocker-McElwain Company, presided over the meeting devoted to the Crocker-McElwain lines and Lee H. Hulett, sales manager of the Chemical Paper Manufacturing Company, was chairman for the Chemical lines with the exception of the cover papers. After luncheon Walter Perry of the New York office conducted the meeting on the Chemical light weight papers and also the cover papers.

The Certificate Bond meeting was next in order and Joseph Holmes presided. A. H. Seyler, acting as chairman pro tem, read the report of the advisory committee. Thomas R. Fort, Jr., of Philadelphia, and Frank J. Wright, of St. Louis, were elected to the advisory committee to succeed A. H. Seyler and C. A. Esty whose terms expired. Mr. Townsend and R. L. Allison of the U. S. Envelope Company talked about the envelopes which they carry to serve the Certificate Bond customers.

In the evening the annual dinner was held after which the Reverend James Gordon Gilkey, D.D., of Springfield, gave a very inspiring address. Dancing followed.

On Saturday the annual golf tournament was held at the Shennecossett Club. The tournament was run off as a kickers handicap match. There were several ties in the different classes all of which were decided by the toss of a coin.

While the men were busy at the business session the ladies were entertained at a bridge party. On Saturday morning the ladies and non golfers enjoyed a very delightful boat ride up the Thames River and out on Long Island Sound.

Every one who attended the conference this year voted it the best yet. The weather man was very kind during the three days giving plenty of sunshine but not too much heat. The Hotel Griswold is ideally situated and of course has a reputation for being a real convention hotel. All of the ladies present were presented with a handsome box of stationery, the gift of the two mills and the U. S. Envelope Company.

Those Who Attended

Harry Alling, The Arnold-Roberts Co., New Haven, Conn.; R. L. Allison, United States Envelope Co., Springfield, Mass.

Charles H. Baldwin, Conrow Bros., New York City; C. H. Barr, Charles H. Barr Associates, Holyoke, Mass.; O. S. Barrie, McClellan Paper Co., Minneapolis, Minn.; Douglas Barry, Lathrop Paper Co., New York City; Leonidas Beck, Charles Beck Company, Philadelphia, Pa.; B. S. Berkowitz, Central Paper Company, Newark, N. J.; A. D. Birchard, Rutter & McNaught, Inc., Boston, Mass.; G. Blandy, 2nd, Charles A. Esty Paper Co., Worcester, Mass.; James D. Bligh, Barton, Duer & Koch Paper Co., Washington, D. C.; Leonard T. Brown, C. E. Dartt Co., Bridgeport, Conn.; Neill S. Brown, General Paper & Cordage Co., Pittsburgh, Pa.; J. L. Buchanan, Chope-Stevens Paper Company, Detroit, Mich.

A. J. Campbell, Arnold-Roberts Co., Boston, Mass.; Alan Chandler, The Alling & Cory Co., Pittsburgh, Pa.; N. A. Considine, Paper House of Penna., Philadelphia, Pa.

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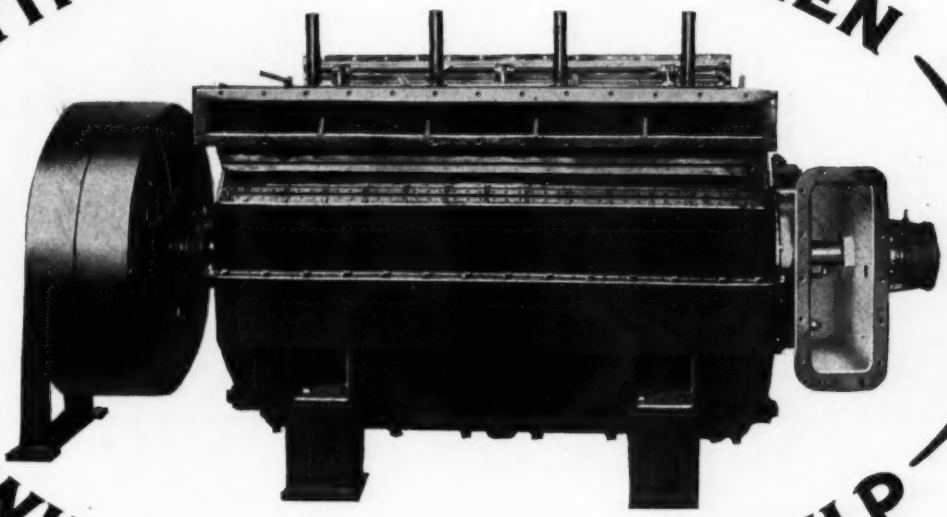

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Conservation Department Distributes Trees

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., July 10, 1929.—During the spring planting season just closed 20,391,280 trees for planting in 3,231 reforesting projects were distributed from forest tree nurseries of the New York State Conservation Department, according to figures given out this week. The trees were distributed as follows: State land, 4,990,550; municipalities, 3,245,950 industrial concerns, $2,009,450; schools and colleges, 290,820; Boy Scouts, 80,250; miscellaneous organizations, 1,246,460; individual land owners, 8,617,800. Twenty new plantations were made in the National Forest Preserve and eleven in state parks. One hundred and eleven municipalities engaged in reforestation projects, among them being an addition to the Otsego county forest of 435,000 trees; plantation in the Erie county forest of 400,000; Essex county forest of 314,500; Little Falls Waterworks, 122,000; New York City Waterworks, 150,000, and the Glens Falls Watershed, 110,000.

The Broome County Sportsmen's Association cooperating with schools throughout the county and starting demonstration forests on school lands planted 152,000 trees. Other organizations included eight chapters of the Izaak Walton League, Rotary, Kiwanis and Lions clubs and 16 golf and country clubs. Forty schools and colleges made plantations and 14 school districts also engaged in reforestation work. The New York Central, Erie and the Delaware and Hudson were among the firms added to the industrial group this year while 14 other industries made plantations, the largest being 1,250,000 trees planted by the Northern New York Utilities, controlled by the St. Regis Paper Company. Indications point to an unusually heavy fall planting this year.

THE WAGNER FURNACE FOR SODA AND SULPHATE MILLS

UNION BAG & PAPER POWER CORPORATION
WOOLWORTH BUILDING
NEW YORK CITY

COPIES OF VICE-PRESIDENT

June 7, 1929

Ross Industries Corporation,
271 Madison Avenue,
New York City.

Gentlemen:-

We are very well pleased with the Wagner Furnace installation in our new plant at Tacoma, Washington.

The kraft pulp mill is entirely dependent upon Wagner Furnaces as this plant has no rotaries. We have, therefore, had a very good opportunity to compare a complete Wagner installation with the conventional rotary and smelter. At no time have we been heldup on production and the results as regards capacity, percentage of recovery and the reduction have exceeded our expectations.

The quality of pulp now being made at this plant is very satisfactory.

The saving in labor over the old type smelter is very marked indeed and the working conditions are very much better.

The introduction of the Wagner System has also accomplished what seemed impossible up to this time; that is, an odorless sulphate mill.

We have no hesitancy in saying that we believe the Wagner furnace is a great step forward in recovery practice and we are glad that we installed this system.

Yours very truly,

E. B. Munn

VICE PRESIDENT.

EBM GJY

This letter speaks for itself

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SOLE LICENSEES

Increases Boiler Efficiency 20 Per Cent

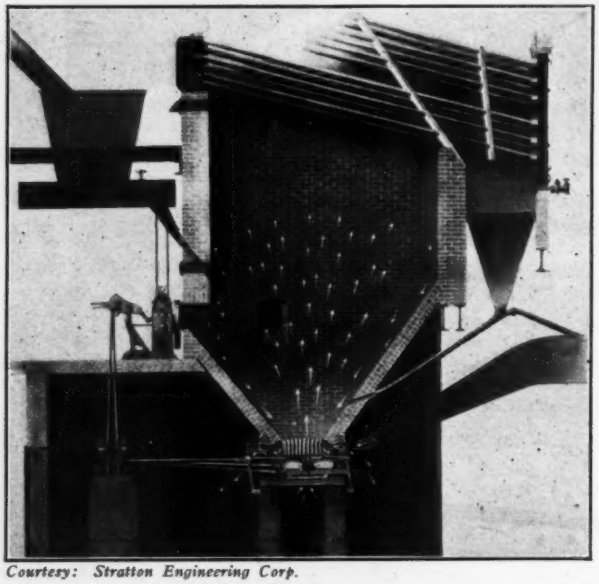
Paper Mills Burning Crushed Coal in Suspension Realize Substantial Savings

By Reginald Trautschold,[1] Consulting Engineer

The same broad, forward looking vision which has been responsible for the fact that more than a third of all the industrial power plants operating at the present time on high steam pressures, *i.e.*, pressures in excess of 300 pounds, are among those employed in the paper making industry has led to even greater innovations in methods of firing the power plant fuel. A system of fuel consumption in which the coal is burned in actual suspension, rather than while resting on grates or in a gaseous mixture as when it is pulverized, has been installed in the power plants of at least two of these progressive establishments.

The arrangement, named after the inventor of the distinctive furnace employed, J. F. O. Stratton, as the Stratton Vertical Jet Furnace, makes use of an entirely new method of burning any commercial grade of bituminous coal without necessity of preliminary coal preparation, or treatment, other than simply a coarse crushing to enable it to pass through a ¼-inch screen. Furthermore, the paper industry has the distinction of being the pioneer in the practical application of this new system of coal burning, a method which gives great promise of effecting marked economies in the consumption of fuel in all types of coal burning power plants.

Literally, the crushed coal is simply poured into a hopper-like furnace from above, through a bifurcated spout, where it encounters a rising column of air, highly heated when the furnace



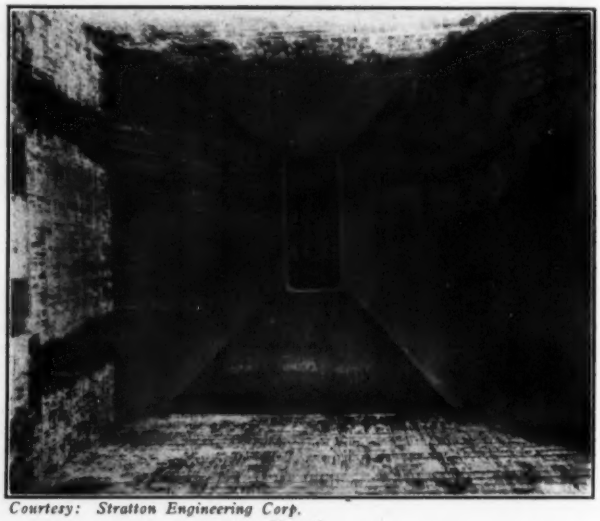
Courtesy: Stratton Engineering Corp.

FIG. 1

Sectional View of Furnace. Arrows indicete direction of air currents.

is in operation, in which it first cokes and then burns completely. The residual ash, being of greater density than the particles of coked coal, precipitates to the throat of the furnace, settling temporarily upon the throat unit, or grates. The smaller particles of coal are almost instantly consumed, while the larger pieces dropping toward the throat of the furnace are coked in motion and burned in suspension, supported by the rising column of heated air.

Owing to the peculiar hopper-like form of the furnace, the air supply, regulated and controlled by the air pressure maintained in the ash-pit, enters the furnace through the bottom throat grates at relatively high velocity, but as the mixture of air and products of combustion approach the heating surfaces of the boiler the velocity gradually decreases. The supporting capacity of the rising air and gases, consequently, differs at all points and zones, being at a maximum at the furnace throat where the air supply enters and at a manimum in the upper zone of the furnace. As a result, the rush of air and gases will suffice, somewhere between



Courtesy: Stratton Engineering Corp.

FIG. 2

Looking Into Furnace Throat. Installation at Continental-Diamond Fibre Co.

these limits, to provide the necessary support for each one of the numerous particles of burning fuel.

Stimulating the buoyancy of the fuel particles, also, is the fact that each particle is constantly changing its size and losing density, first as it cokes and later as it is consumed. The result is the constant movement of each particle as it seeks a condition of equilibrium, a situation which is helpfully instrumental in effecting the complete combustion of virtually all combustible material. Each particle, moreover, is retained within the furnace until it is consumed, regardless of its size, for should any pieces of partially consumed fuel drop to the bottom of the furnace with the heavier incombustible, a peculiar reciprocating action of the grate sections separates the good fuel from the ashes, the latter only being precipitated into the ash-pit.

A view of conditions as so developed in the combustion chamber, through the aid of a furnace glass, shows a restless mass of incandescent gases in ceaseless turbulent motion, interspersed with bobbing points of even more intensive brilliancy. The latter are caused by particles of burning fuel hopelessly seeking a state of equilibrium, or rest, before being entirely consumed. The graduation of gas velocities at various levels in the furnace is clearly visible and, also, an induced downward current of relatively cool gases along the side-walls. This counterflow effectively protects the refractory material of the furnace lining against destructive heat conditions and accounts for the almost negligible expenses contracted for maintenance of brickwork in the furnaces, even when abnormally high furnace temperatures are maintained.

[1] Power Engineering Consultant, PAPER TRADE JOURNAL.

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THE NOBLE & WOOD MACHINE CO.
PAPER MILL MACHINERY
HOOSICK FALLS, N.Y.

May 29th, 1929.

Memo to Mr. King:-

We have just had an inquiry for a secondhand Bull Dog Jordan.

This has suggested to me that possibly it might be significant that while we have been manufacturing Bull Dog Jordans for the felt and roofing mills since 1910 there has never been a single one of these machines on the secondhand market.

Draw your own conclusions!

H.N. Weir.

HNW/B.

What more need be said?

NOBLE & WOOD

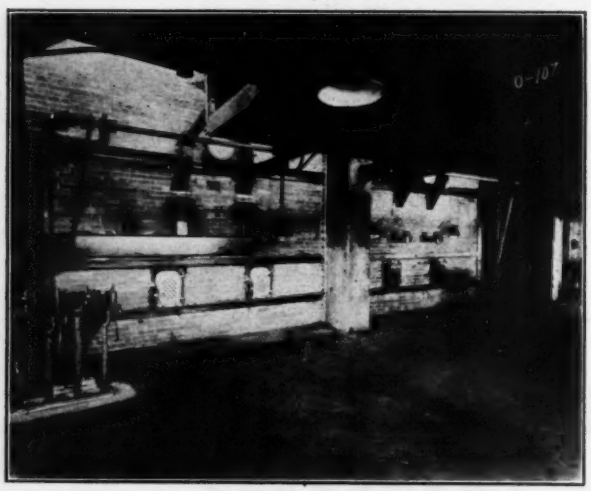
MACHINE COMPANY

Hoosick Falls New York

The whole interior of the furnace is in a state of incandescense and effectively used in promoting and supporting combustion. The large radiant zone is most favorable to the maximum transfer of heat to the boiler by radiation and the low velocity of the gases as they enter the heat absorption zone is conducive to the utmost transfer of heat by convection and conduction. This highly efficient utilization of the heat liberated by the combustion of the fuel is the reason for the relatively low exit temperatures of the flue gases leaving boilers fired by these furnaces. In recent tests, for instance, the temperature of the exit gases from a two-pass horizontal water-tube boiler of 450-horsepower rating was only 580 degrees Fahrenheit when driving the boiler at 225 per cent. of rating and 495 degrees at 140 per cent. of rating.

Furnace and boiler efficiencies such as are indicated by performances of this order and the secret of the outstanding successes of installations of these furnaces burning crushed coal in suspension are traceable to the fact that the amount of air necessarily admitted to the furnace to support the particles of fuel as they are consumed floating around in the rush of air and gases need be no greater than that essential for highly efficient combustion at any rate of coal feed, over a wide range of load requirements. It can easily be appreciated, of course, that a rapid rush of air through a restricted opening will support particles of fuel during the relatively brief period of their consumption, but in this new method of burning coal in suspension, the furnace, combustion chamber, admission air port, etc. are so designed and proportioned that no excess air, *i. e.*, more air than actually required for combustion, need be admitted to the furnace. A very sensitive coordination of coal feed and requisite air supply can be maintained, furthermore, by the simple control and regulation of the system.

The control is so effective and positive, in fact, that coals varying greatly in composition and heating value can be utilized with equal facility in these furnaces, and over a remarkably extensive range of firing rates, without exceeding the limits of air velocity required to burn the particular crushed coal efficiently while it is held in suspension. Such variations in the rate of air admittance as are required for differing grades of coal and rates of firing simply elevate or lower slightly the center of combustion



Courtesy: Stratton Engineering Corp

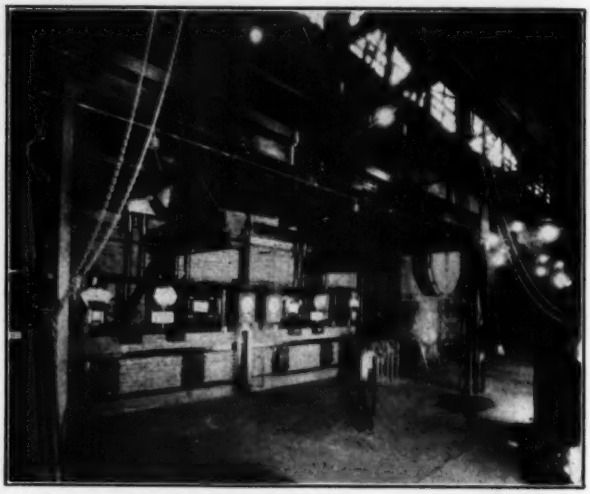
FIG. 3

Firing Floor at the United States Gypsum Co. 3 500 hp. boilers served equipped with Stratton Vertical Jet Furnaces.

activity in the furnace. That is, the variations in air velocity requirements to meet differing conditions of coal quality and load demand are automatically cared for by a slight modification in the furnace level at which the center of combustion activity occurs, such variation in level being governed by the controlled regulation of the air and fuel supplies respectively.

The close adjustment of these two essential supply feeds is easily effected, independently of each other, and makes it possible to maintain an average of at least 14 per cent CO_2 in flue gas content, frequently well over 15 per cent, and the thorough mixing to which the fuel and air is subjected in the incandescent furnace prevents the formation of any CO, at any combustion rate within the normal operating range of the boiler and furnace. Combustion at high continuous efficiency, smokelessly and without fly-ash formation, results and the system is instantly responsive to control, and both simple and very economical to operate.

Due to the low velocity of the gases in the upper portion of the furnace, together with the fact that coal crushed simply to pass a ¼-inch screen contains an almost negligible proportion of fines as small as 200 mesh, there is virtually no tendency toward slag



Courtesy: Stratton Engineering Corp.

FIG. 4

2 450 hp. boilers equipped with Stratton Furnaces. Continental-Diamond Fibre Co.

formation on the boiler tubes. This is an important factor in the attainment of high continuous efficiency in steam generation and the freedom from such deposits, with this method of burning crushed coal in suspension, is pronounced, no matter what grade of coal is fired. An explanation of the general nature of this characteristic is that almost any grade of bituminous coal, friable or hard, low or high in volatile, breaks down into a quite similar gradation of sizes when crushed simply to pass a ¼-inch screen.

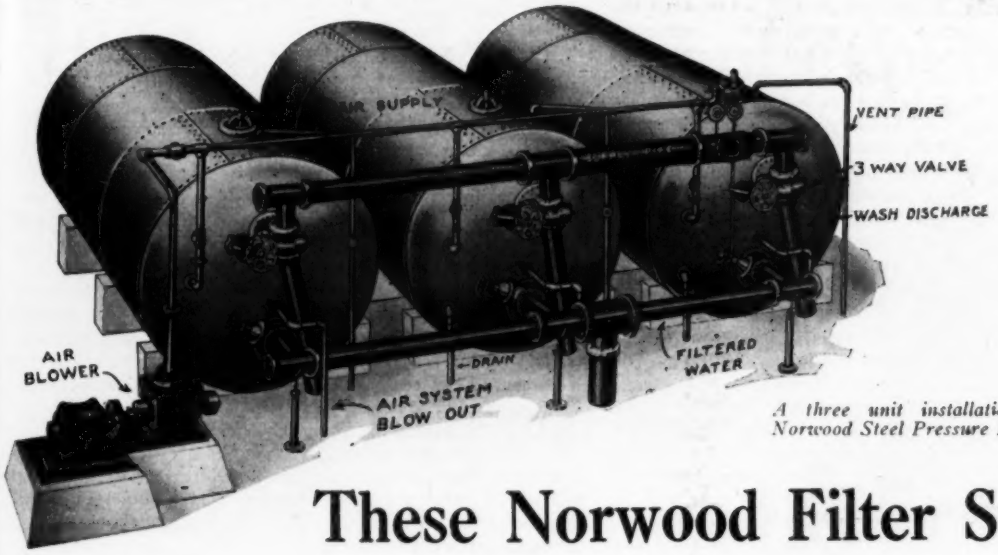
The crushed coal is fed to the furnace by means of a small drag chain conveyor linking the fuel service hopper to the bifurcated feed spout through which the coal enters the furnace by gravity. The speed of this conveyor, hence the rate at which the coal pours into the furnace, can be regulated at will by a variable speed transmission drive incorporated in the drive stand control located in front of each boiler, on the operating floor. The rate of feed may also be varied by means of an adjustable gate on the feeder.

At the point at which the coal enters the furnace, a small air-blast admits sufficient air to burn the finer particles of fuel immediately, while the larger pieces are consumed in various zones between the point of fuel entry and the grates at the bottom of the hopper-shaped furnace, through which the main air supply enters. The distance between the auxiliary air supply nozzle and these grates, the depth of the furnace, is made sufficient to insure the thorough coking of all coal within the furnace, while the size

TABLE 1
SIZING TESTS ON CRUSHED COAL

Gradations	Friable Low volatile coal	Hard High volatile coal
Over ¼-in.	8.8 per cent	2.6 per cent
Through ¼-in., over $\frac{1}{2}$-in.	35.2	35.9
Through $\frac{1}{2}$-in., over 30 mesh	22.0	20.5
Through 30 mesh, over 50 mesh	13.2	23.1
Through 50 mesh, over 100 mesh	9.9	5.1
Through 100 mesh	10.9	12.8
	100.0 per cent	100.0 per cent

Courtesy: Stratton Engineering Corporation.



A three unit installation of Norwood Steel Pressure Filters

These Norwood Filter Systems Will Save You Money!

A typical installation of Norwood Gravity Filters in a Paper Mill

NORWOOD'S three-unit filtration systems are saving money in many other mills and they will actually save money for you too. With Norwood's three-unit systems, either pressure or gravity type, water can be taken into your plant directly from your river or stream and be perfectly filtered to remove pollution and foreign matter. Automatic chemical treatment can be added to remove color and objectionable chemical content; and maintenance and operating costs will be so low as to be negligible, for one single hand wheel replaces the many complicated operating contraptions found on some systems.

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You can't go wrong with a Norwood installation of Filters, Calenders, Platers, Dusters, Rag Thrashers, Folding Machines, Suction Boxes or other equipment. Ask for catalogs and specifications.

Catalogs and full information upon request.

Norwood Engineering Co., Florence, Mass.

NORWOOD

and shape of the combustion chamber is governed by the size and type of the boiler served, and by the ratings to be developed.

The sets of reciprocating grates, separated by a horizontal slot adjustable as to width from the drive stand control, support an ash bed a few inches in thickness in the constricted throat of the furnace. This bed of hot ashes, which is constantly maintained, supplies the necessary heat at the extreme bottom for coking any particle of coal which may not have been consumed in the upper furnace zones and for furnishing primary ignition. The upper of the reciprocating grates are slicing members which force the precipitation of ashes and any unconsumed fuel into the opening between the grates through which the main air supply enters. The comparatively light fuel, coke, if any is present, is immediately blown back up into the incandescent upper furnace zones and only the heavier ashes fall to the pit below.

The main air supply, at an initial pressure of a few ounces, is first circulated about the grate unit, cooling the metal sections surrounding the throat of the furnace and preheating the air, and then passes into the ash pit, from where it flows upward through the slot between the grates and in counterflow to the ashes falling into the pit. Passing through the shower of discharged ashes, the hot grates and the radiant heat at the bottom of the furnace, the air absorbs much further heat and when it encounters the injected fuel is in a highly heated condition. At the same time, its volume and velocity are under positive and sensitive control at the drive stand, the control regulating the width of the grate slot through which the main air supply ascends.

A boiler served by a furnace under this sensitive control can be brought from a banked condition to its maximum combustion rate almost instantly and adjustments to varying load requirements can be made most expeditiously. The fire can be quickly banked by simply closing the throat mechanism and stopping the flow of coal and air. The ignited fuel in suspension at the instant is simply deposited upon the closed grates and if such fire is kept alive, as it can be for long periods with a very sparse addition of coal from time to time, it will suffice to supply initial ignition when resuming operations.

At one plant where these furnaces are employed, it is customary to maintain a steam pressure of 350 pounds over Sunday with a banked fire, in order to be able to go into instant service at full load. A 508-horsepower boiler was kept in such condition from one Saturday noon to the following Monday morning with the consumption of only 7 tons of coal, less than 350 pounds per hour.

When starting a new fire, the procedure is extremely simple. All that is usually necessary is to throw some burning waste on the grates or to start a small wood fire and then slowly start the coal feeder, regulating the air supply as required.

Suitable Grades of Coal

There being no solid fuel bed and the throat mechanism effectively disposing of any slag formation by the continuous discharge of the ashes, coals varying in quality over a very wide range can be burned quite satisfactorily, good coal, bad and indifferent. Coals containing as high as 22 per cent ash and as much as 20 per cent moisture have been reported as being used successfully, the moisture content presenting no obstacle, since the pulverization of the fuel is not entailed. Also, the coking qualities and sizing of the coal are unimportant, for though high volatile coals are usually employed, this is because such coals are apt to be the cheapest and most plentiful, not because their use is necessary.

Even low heat value coals, running high in ash and incombustibles, can be used with quite satisfactory efficiency, though such coals will reduce maximum ratings, of course, in any type of coal burning equipment. The important point is that such coals can be used in these furnaces without introducing operating difficulties and at relatively high efficiencies when market conditions make the use of these low grades of fuel profitable or necessary.

TABLE 3
CHARACTERISTIC SIZING OF ASH-PIT REFUSE

Screen Size	Percentage
Over ½-in.	10.3
Through ½-in., over ¼-in.	31.2
Through ¼-in., over ⅛-in.	53.9
Through ⅛-in.	4.6
	100.0

Courtesy: Stratton Engineering Corporation.

The ashes discharged, when burning low grades of coal as well as higher grade fuels, are of quite unusually even size, almost all falling between the limits of 1/16 and ½ inch. The combustible content of the ashes is also quite favorable, normally averaging less than 12 per cent, which is equivalent to a loss of fuel by such cause of less than 2 per cent.

Maintenance and Operating Costs

In regard to the major items of the operating cost in steam generation, labor, power, repairs and maintenance, this distinctive method of burning coal in suspension gives quite outstanding promise of being extremely economical. In fact, a prominent firm of engineers investigating the system for a client about a year ago reported:

"The results of this investigation, briefly stated, are that, in our opinion, the Stratton Furnace fulfils a long felt want in the power plant field and that it will result in the generation of steam at a lower cost than any apparatus in the field."

In the matter of necessary attendance, the labor requirements are most certainly low, as low and probably lower than for any other type of furnace, owing to the simplicity of the apparatus and control equipment, the automatic nature of virtually all processes entailed and the extreme ease and flexibility with which combustion control and regulation are effected. Experienced steam plant operating men, who have operated these furnaces or have observed their operation, highly endorse the method of coal burning and are quite enthusiastic regarding the abolition of distasteful work the installation of the system seems to insure.

Maintenance and repair expenses, though they differ, of course, in different installations, have been invariably relatively low. At the United States Gypsum Company, the first plant to install these furnaces and where the equipment has been in service for some three years, the total repair and maintenance cost on one of these furnaces serving a 500-horsepower boiler for a period of two years is reported to have been a matter of $110.00. This figure covered full maintenance of both furnace parts and brick work and during the two years something over 20,000 tons of coal were consumed by the one unit, habitually driven at high ratings. This is equivalent to a repair and maintenance burden per ton of coal consumed of only a little more than half a cent.

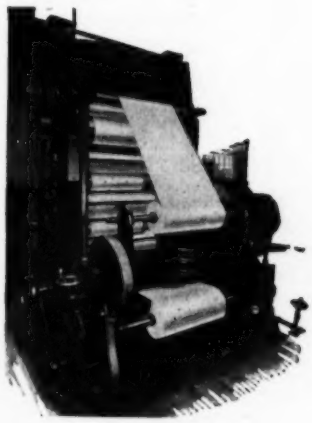
While this most modest charge may not always be realized, the plant of the United States Gypsum Company being equipped exclusively with these furnaces and having had several years in which to train its boiler room force in the operation and care of the equipment, an estimate based on reports from this and other plants is that the entire cost of operation, including labor and power, as well as repairs and maintenance, should not exceed at most a very few cents per ton of coal consumed. With other

TABLE 2—CHARACTERISTICS OF VARIOUS COALS BURNED SUCCESSFULLY IN STRATTON FURNACES

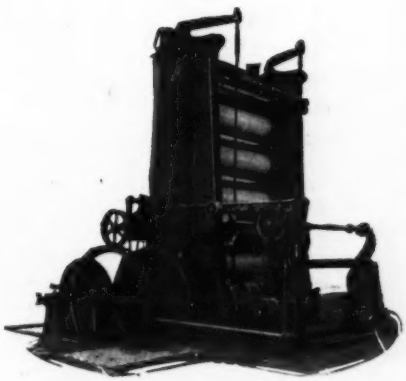
	West Va.	Pennsylvania				Illinois		Indiana
Content	Monongahela County	Allegheny County	Westmoreland Co.	Indiana County	Clearfield County	Jackson County	Macoupin County	Vermillion County
Volatile	34.56%	34.28%	32.12%	30.61%	22.10%	31.99%	34.82%	37.78%
Ash	9.93	10.42	9.58	8.70	8.18	11.95	9.12	10.29
Moisture	2.66	3.45	1.95	3.36	2.54	8.88	11.70	8.06
B.t.u. as fired	13,293	12,982	13,340	13,485	13,968	11,508	11,305	12,010
Sulphur	2.65%	1.14%	1.42%	2.33%	0.84%	3.14%	3.56%	3.88%
F. T. A.	2080-2190°	2370-2420°	2800°+	2271-2380°	2800°+	2145°	2080°	2170-2280°

Courtesy: Stratton Engineering Corporation.

109 Years give a Lot of experience



and practical knowledge in making calender rolls



The name Butterworth has been identified as one of the leaders in the textile industry for more than a century. These years of experience have enabled Butterworth to make calender rolls for the paper manufacturers which have exceptionally long life.

Butterworth Rolls for Coated Stock are made of the highest grade, cotton, especially selected for the purpose.

For Glassine, Butterworth Rolls give 1500 hours. They also give many extra hours on super.

H. W. BUTTERWORTH & SONS CO.

Established 1820

PHILADELPHIA, PA.

Plants at Philadelphia and Bethayres, Pa.

NEW ENGLAND OFFICE: Turk's Head Bldg., Providence, R. I.

SOUTHERN OFFICE: Johnstown Bldg., Charlotte, N. C.

IN CANADA: W. J. Westaway, Hamilton, Ont.

BUTTERWORTH *Calender* ROLLS

systems of coal burning, such charge frequently runs upward of 20 cents per ton of coal fired, including the power item.

The power requirements for the operation of the Stratton system are quite nominal, of course, a ¼-horsepower motor amply sufficing for driving the entire furnace equipment for a 500-horsepower boiler, including the continuous movement of the grates and the coal feeder, governed by the drive stand control. The power demand for driving a fan to furnish an adequate air supply under a pressure equivalent to that of a 4-inch water column is probably considerably less than that customarily entailed in furnishing the air supply in other systems of coal consumption, while the power required for crushing the coal simply to pass a ¼-inch screen is only a small fraction of the amount consumed in the preparation of fuel for pulverized coal firing, about 3 kilowatt-hours per ton.

Records Attained in Specific Installations

These marked operating economies, furthermore, are well matched by the general high efficiency attainments of the system, by the completeness of combustion, effectiveness of heat transfer and the quite nominal nature of the unavoidable thermal losses, in all of which respects the results customarily secured are in the class of the best attainable with pulverized coal firing and advanced development in other systems of combustion. This appears quite evident in the results secured from tests conducted of the installations at the United States Gypsum Company and Continental-Diamond Fibre Company plants, the two present outstanding installations in the paper making industry.

While these results, the statistical records of which are presented in a common table for ease in comparing attainments at the two plants under conditions which can hardly be termed similar, were secured in the conduct of tests, the tests were made under ordinary operating conditions and should be truly typical of everyday performances. The substantially automatic manner in which the system functions, the ease with which close regulation is effected and the further fact that the duties imposed in maintaining favorable operating conditions are extremely light virtually prohibit test attainments differing to any noticeable extent from those secured in ordinary daily operation.

The efficiencies developed, between 79 and 80 per cent, while not unprecedented in present day power plant operating standards by any means, were secured without the aid of economizers, water-walls or air-preheaters, plant refinements considered essential in other modern power houses for the attainment of high efficiencies. The provision of water-walls would have added little and would have entailed an unwarranted expense, it is true, but the fact remains that the necessity for such an investment was avoided. Very much the same situation pertains in the matter of special air-preheater equipment. A surcharge for such refinements was avoided and a surcharge of a comparatively small amount is a substantial offset to efficiency attainments. For illustration, a surcharge of only 25 cents per ton of fuel consumed, say a matter of about 1.5 or 2 cents for each 100 horsepower-hours developed, is equivalent to a reduction in efficiency of from 5 to 10 per cent, depending upon the cost of coal.

As for the question of absence of economizers, the use of such apparatus would probably have elevated the efficiency attainments to around 84 or 85 per cent. Such a gain would be effected, however, only at the expense of a considerably heavier installation investment, warranted only if the surcharge imposed was suitably offset by the increased economy in coal consumption . It is rarely appreciated what a delicate relation actually exists between good engineering practice and financial considerations. Good engineering imposes the realization of the utmost for each dollar expended. The ranking is clear cut and it may be assumed, consequently, that the refinements of economizers in these two plants were not warranted.

Investigations into the efficiency attainments of many industrial power plants by experienced and qualified engineers disclose the fact that even today the average operating efficiency of furnace and boiler is in the neighborhood of 65 per cent. It is claimed with authoritative justification, also, that the average operating efficiency of furnace and boiler is in the neighborhood of 65 per cent. It is claimed with authoritative justification, also, that the average operating efficiency of furnace and boiler can be elevated to 78 per cent, an improvement of 20 per cent, by being equipped with this distinctive system of burning coal in suspension. If economizers are to be reckoned with, the average efficiency of ordinary modern furnaces and boilers is about 68 per cent and it is likewise held that an elevation to 82 per cent can be counted upon by the adoption of the new method of burning crushed coal, a net improvement of 20.6 per cent. These computations are presented simply to provide the interested paper mill with some basis of reputed dependability upon which to investigate its own steam costs and to visualize in a manner the economic justification of possible changes in its methods of coal burning.

Economic Considerations in Respect to Efficiency Betterment

Going a step further in these investigations, which every industrial plant should make from time to time, considerably more light can be thrown on the subject of when to change the method of coal burning. Accepting the demonstrations already made by installations of the new method of burning coal in suspension as indicative of attainable probabilities, a hypothetical situation may be advanced which will bring out the relationship between what may be termed anticipated economies and warranted investment.

Assuming then, that a power plant operates on a 24-hour full load basis and employs coal costing $5.00 a net ton delivered. Under such circumstances, a betterment of 20 per cent in furnace and boiler efficiency, even when making no allowances for possible reductions in maintenance and labor expenses or the use of cheaper coal, would effect a return equal to a new investment of $80.00 per rated boiler horsepower for modernization in three years. If, then, as a result of modernizing equipment, an additional saving of 2 per cent, for reduced maintenance, is realized and the plant fuel could be changed from, say, a low volatile, Eastern semi-bituminous coal to a low volatile slack coal, the additional economy would make the expenditure of about $110.00 per rated boiler horsepower in three years justifiable and still cover the cost of the improvements in equipment.

The cost of replacing existing combustion equipment with the system of burning crushed coal in suspension, including such structural changes, labor costs and materials as necessary to adapt the installed settings to the new requirements, but retaining the existing boiler units, is reported to average from $25.00 to $35.00 per rated boiler horsepower. The saving which would justify the investment of $110.00 per rated boiler horsepower, consequently, is more than ample to cover the total cost of modernizing the combustion equipment and of new boiler equipment within a reasonable period. Moreover, should the boiler equipment be retained, the cost of modernizing the combustion equipment by installing a system capable of bettering furnace and boiler effi-

(Continued on page 70)

TABLE 4
TESTS OF STRATTON VERTICAL JET FURNACES

Plant	Continental-Diamond Fibre Company	U. S. Gypsum Company
Date	3/24/29	5/21/29
Coal quality: Moisture	3.85%	3.85%
Ash	9.28%	8.15%
Volatile	25.80%	33.10%
Sulphur	1.04%	1.18%
Heating value	13,350 B.t.u.	13,540 B.t.u.
Steam pressure	148 lbs.	320 lbs.
Steam temperature	576° F.	550° F.
Feed water temperature	200° F.	238° F.
Flue gas temperature	539° F.	555° F.
Furnace draft (water col.)	0.09 in.	0.10 in.
Ash pit pressure (water col.)	0.53 in.	0.58 in.
Coal burned per hour	2,620 lbs.	2,485 lbs.
Steam per hour	24,550 lbs.	24,850 lbs.
Evaporation per pound coal	9.35 lbs.	10.00 lbs.
Per cent rating developed	192.0	160.0
Cost of coal per ton	$4.17	$3.72
Cost per 1,000 lbs. steam	$0.223	$0.186
Heat balance:		
Heat absorbed	79.8%	79.3%
Stack loss	11.7%	11.8%
Refuse loss	1.7%	0.8%
Moisture loss	0.4%	0.3%
Hydrogen loss	3.8%	3.8%
Radiation and unaccounted	2.6%	4.0%
CO_2 content	13.6%	13.4%
Combustible in refuse	14.40%	8.10%

Courtesy: Stratton Engineering Corporation.

New York Trade Jottings

A. L. Dawe, of the Canada Power and Paper Corporation, Montreal, Que., sailed from New York for Europe last Friday night.

* * *

L. Hyman & Sons, paper merchants, have removed from 35 West Houston street to larger and more convenient quarters at 102 Prince street, corner of Greene street, New York.

* * *

E. G. Bullis, who was recently appointed sales manager of the Groveton Paper Company, of Groveton, N. H., will in future be permanently located in the New York office of the company, at 11 West 42nd street.

* * *

Nathan Leshner, head of the Leshner Paper Stock Company, Inc., sailed from New York last week aboard the North German liner *Columbus*, accompanied by Mrs. Leshner, for a three months tour of Europe.

* * *

The Mendelsohn Paper Company, of Brooklyn, N. Y., has been incorporated with a capital stock of $10,000, to manufacture and deal in paper goods. B. Lipson, of 353 Stone Avenue, Brooklyn, is the representative.

* * *

The Mathieson Alkali Company, of New York, is erecting two boilers, which will an addition to the available power to run the Mathieson plant at Sarlville, Va. The work is being done by the Webster Engineering Company and will be completed in September.

* * *

D. Jospeh Guiney, president of the Associated Printing Salesmen, Inc., has sent out invitations to about forty paper organizations, to become members of the association under the change in the constitution recently effected. It is reported that the letters have brought forth many favorable replies and that a number of paper houses and paper salesmen will become members of the association.

* * *

Francis Hodgkinson, consulting mechanical engineer of the Westinghouse Electric and Manufacturing Company, sailed on June 8 from New York aboard the Steam Ship *Paris* for Europe on an extended business trip. While abroad, Mr. Hodgkinson will deliver a paper on "Journal Bearing Practice" at a meeting of the British Institute of Mechanical Engineers. He will also attend the sessions of Advisory Committee No. 5 of the International Electric Technical Commission, of which he is a member. The sessions will be held during the early part of July in England.

Holyoke Paper Co. To Install Additional Plant

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 2, 1929.—Announcement was made Friday of last week that the Holyoke Water Power Company would install another hydro-electric generating plant at the No. 2 overflow near the Norman Division of the American Writing Paper Company. This will have a generating capacity of about 3,500 KW. This plan does not mean the abandonment of the construction of the unit at the No. 4 overflow which will however be built probably after the one at the No. 2 overflow is completed.

These new projects are a part of the plan of the company to pass the waste or overflow water through turbine wheels thus generating power instead of spilling it over wires as at present. The investment in the two projects will be between $500,000 and $1,000,000.

The directors at their meeting authorizing this work also declared a regular quarterly dividend of 3 per cent and an extra dividend of 2 per cent on the 24,000 shares outstanding.

Paperboard Industries To Meet

The Paperboard Industries Association will meet at the Westchester Biltmore Country Club, Rye, N. Y., July 17-18.

H. S. Adler, secretary of the association, has sent out the following notice regarding the meeting:

"If your reservations at the club have not already been arranged, we shall be glad to look after this detail for you upon receipt of advice as to the exact time of your arrival in Rye, and the kind of accommodations desired. While the club promises to do its utmost to reserve the exact accommodations desired by members, request is made that so far as possible members double-up, as it may be necessary to put two in a room in some cases. The club further asks that all requests for reservations be filed with it through the office of the Paperboard Industries Association.

"As you will appreciate, a number of meetings are scheduled to be held within a relative short period of time. Therefore, every member is urged to be in attendance at the sessions promptly at the starting time. It is of course necessary that each succeeding meeting commence promptly at the hour indicated. Please cooperate by coming to the sessions on time.

"Please note that the sessions on Wednesday have been scheduled to permit adjournment at 4:00 p.m., thus giving members an opportunity to enjoy golf and other recreations; also that the sessions on Thursday will quite likely be concluded in time for members to spend a portion of the afternoon at recreation.

"We cannot impress upon you too strongly the desirability of every company in the industry being properly represented at these meetings.

"At the Group and General Sessions, reports will be submitted covering a number of important subjects, including changes in the carriers' specifications affecting the products of the industry; the effort being made to increase the use of paperboard and paperboard products; essential statistics covering operations in the industry, etc.

"At the Trade Practice General Session (Thursday morning), up-to-the-minute information will be given with regard to this new activity. Decision rests with the members of the industry as to whether the Paperboard, Container and Folding Box industry is to derive a substantial benefit from an efficient administration of the trade practice rules, approved for the industry by the U. S. Federal Trade Commission.

"It is also hoped that you will use your good offices to secure the attendance at the meeting of any non-member manufacturer with whom you are in contact."

John C. Cook Dead

John C. Cook, vice-president of the St. Maurice Paper Company, and for many years a prominent New York newspaper man, died suddenly last Saturday at the age of 63 years in the office building in which his firm is located at 230 Park avenue.

During his newspaper career Mr. Cook served on the staff of the *Sun*. At one time he was manager of the Philadelphia *Press*. Later he held positions as business manager of the *Evening Graphic*, the *Evening Post*, the *Evening Mail* and the *Journal of Commerce*. Still later, on withdrawing from the newspaper field. Mr. Cook acted as advertising manager for the Wanamaker store.

He is survived by his wife, Mrs. Emma Cook; his mother, Mrs. D. N. Cook of Philadelphia, and his sister, Mrs. Clara Steck, also of Philadelphia.

Lansing Joins Noble & Wood

Eugene H. Lansing, for many years a familiar figure in the paper industry through his practical methods and devices for cleaning and preserving paper machine felts, has joined The Noble & Wood Machine Company of Hoosick Falls, N. Y.

It is reported that the purpose of Mr. Lansing's association with this company is the development, manufacture and marketing of a new improved Felt Washer, details of which will soon be announced.

PAPER TRADE JOURNAL
ESTABLISHED 1872

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Vol. LXXXIX, New York, July 11, 1929 No. 2

ECONOMIES IN GERMAN PRODUCTION

Except for chemical pulp, German production in the paper and board industry declined somewhat in the first quarter of 1929 as compared with the corresponding quarter last year according to a Department of Commerce report. Paper production totaled 514,422 metric tons (metric ton equals 2,205 pounds) during the three months period ended March 31, 1929, as against 521,931 tons in 1928; board production amounted to 99,230 tons, as against 108,171 tons last year; and mechanical pulp 197,978 tons as against 215,131 tons. The exception noted above, chemical pulp, shows an increase in production during this period from 280,948 tons to 287,043 tons.

Local news print consumption has fallen off slightly in connection with falling consumption of advertising space in the newspapers and magazines, although the Union of German News Print Mills, including 45 German manufacturers, lowered prices recently to stimulate buying.

Fine paper (bank note, check paper, etc.) producers are less optimistic than heretofore, especially in view of the lower demand from foreign markets.

The wrapping paper branch has little to complain of now with increasing exports, although this has been accompanied by a decline in prices. The demand is chiefly for high grade sulphite and kraft papers for overseas packings.

Pulpwood prices have moved upward from 1.50 to 1.80 marks per cubic meter in the log above their low summer level last year. This has forced up chemical pulp prices, and it seems that mechanical wood pulp prices likewise may be expected to advance.

Exports of the German paper and pulp industry during the first quarter of the current year, on the other hand, show a rise from 198,022 metric tons to 213,789 tons and from 108,080,000 reichsmarks ($25,723,00) to 114,518,000 reichsmarks ($27,255,000). Imports at the same time declined in volume from 61,716 tons to 50,551 tons and in value from 18,519,000 reichsmarks ($4,407,500) to 17,015,000 reichsmarks ($4,049,600).

Thus last year's forecasts of a saturation in German production seem to be realized now. Though a slight improvement is noticeable in the export trade, the domestic demand is not so good with a resultant decline in output.

Concentration and the further introduction of what is known as scientific management still occupy the German paper industry. The extension of the cartel movement continues, with a view to promoting price uniformity. The small concerns are threatened by the larger groups, which are expanding particularly with a view to insuring their own supplies of pulpwood. The latest large development illustrating this point is the merger of the Feldmuehle Papier und Zellstoffwerke Aktiengesellschaft, of Stettin, and the Papierfabrik Reisholz, of Dusseldorf, an amalgamation which will put one-third of Germany's annual output of approximately 550,000 metric tons of news print under one company. Steps toward this merger were accelerated by the decline in news print prices which has been going on since 1926.

Another necessary economy has been effected here in closer contact between half-fabricate producers and the refining mills, without middleman's intermediary and commissions.

Operators are also attempting to better what they feel to be the abnormally low prices which have resulted from the keen competition on the part of the Canadian mills, but their efforts in this direction have so far been little rewarded.

INTERNATIONAL STANDARDIZATION

A far-reaching development in national industrial standardization activities had its inception on Tuesday of this week when railroad and utility presidents and other first line executives representing nine of the nation's greatest industries met at the headquarters of the American Standards Association in New York to take over from scientists and engineers the reins of direction of the national standarization movement, according to an announcement made by James A. Farrell, president of the U. S. Steel Corporation and, since 1925, chairman of the Advisory Committee of the American Standards Association. The occasion was the organization meeting of the first board of directors of the American Standards Association, a national federation of 40 technical, trade, and industrial organizations and government departments. Recognition by industrial executives of the tremendous savings to be made through standardization led to the recent re-organization of the association to place control of standardization policies into the hands of industrial leaders.

The Board of Directors includes in its membership Matthew S. Sloan, president of the New York Edison and affiliated electric companies; L. A. Downs, president of the Illinois Central Railroad; Bancroft Gherardi, vice president of the American Telephone and Telegraph Company; F. E. Moskovics, president of the Improved Products Corporation; Quincy Bent, vice president of the Bethlehem Steel Company; Howard Coonley, president of the Walworth Company; R. J. Sullivan, vice president of the Travelers Insurance Company; C. L. Collins, president of the Reliance Electric and Engineering Company; and George K. Burgess, Director of the United States Bureau of Standards.

One of the most important questions to come up before the Board of Directors was that of American participation in international standardization activities. The International Standards Association, an affiliation consisting of the national standardizing bodies of Austria, Belgium, Czechoslovakia, Denmark, Finland, France, Germany, Holland (with reservation), Hungary, Italy, Norway, Russia, Sweden and Switzerland formally invited the American Standards Association to its membership. Although the American body was represented in the organization of the International Standards Association, membership has been kept pending

to await the action of the Board of Directors. The International Standards Association now maintains an office at Baden, Switzerland.

The full control of national standardization policies, since the organization of the American Standards Association as the American Enineering Standards Committee in 1919, has been entirely in the hands of engineers and scientists. The reorganization which led to the formation of the board resulted from increasing interest of industrial executives in national standardization work. The first meeting of the board is expected to be followed by an intensive campaign to finance national standardization activities on a larger scale than heretofore.

Standardizing Paper Board Rolls

Brooklyn, N. Y., July 6, 1929.

EDITOR, PAPER TRADE JOURNAL:

In view of the progress made toward standardizing various commercial products in other industries, we have observed several important economies in the paper board manufacturing field which we believe would simplify and improve existing conditions.

We have no doubt that you as publishers of a trade journal devoted to the interests of paper board manufacturers and paper box makers are interested and open to suggestions of this nature, and we are, therefore, respectfully submitting the following suggestions for your approval and endorsement.

At the present time, converters of paper board throughout the country request their paper board from the mills in rolls of almost every conceivable size. This, in turn, obliges the mills to provide for an unnecessarily wide range of cores for the centers of the rolls, where cores are used; and where cores are not used, various sizes of expensive collapsible wind shafts for use on the roll-winders must be available.

But what is worse, the mills are required to make a great variety of roll sizes of widely differing diameters. This requires that the mills must frequently make rolls of different diameters at the same time out of the same web as it comes from the paper machine.

This entails the use of roll-winding mechanism which is not efficient in the matter of speed and economy of operation, as the type of roll-winder used for this purpose is not capable of producing rolls which are compact and firm as to the winding, with the result that these rolls do not carry with the best degree of safety in shipment and necessary handling from the mill to the user. Aside from this, such winders are cumbersome and troublesome to operate, and they would not otherwise be used.

For example, let us assume that a paper machine producing a web 100 inches in width is to cover the requirements of two or more customers for rolls of the same material. One customer's order may call for rolls 35 inches wide and 40 inches diameter, wound on cores of wood or iron pipe or paper cores, as specified by him; and another order may be on hand for rolls 30 inches wide, wound 30 inches in diameter, with a 3 inch hole and no core in the center. The difference in roll widths presents no difficulties, but the difference in roll diameters and core diameters makes unnecessary difficulties and hampers production.

On the other hand, if both customers would consent to receive their rolls in a diameter of 40 inches, and the same core specifications or no core at all in the center of the rolls, the winding operation would be greatly facilitated and a more efficient machine could be used.

There is no question that customers utilizing paper board as a raw material could standardize on roll diameters and core specifications in much the same way as the newspaper pressrooms the world over, where a standard news roll of approximately 32 inches diameter is maintained. This is a result not easy to obtain as to one specific diameter as a standard for paper board rolls, but instead of there being a range of diameters running all the way from 20 inches to 60 inches as at present, there might well be not more than three diameters, say, for instance, 30 inches, 48 inches and 60 inches. The core in the center of the rolls, where a core is used, could have an outside diameter of, say, 5 inches and an inside diameter of 4 inches using a modern type of laminated straw board core, reenforced at each end with metal caps. Where a core is not used, the hole in the roll could be 3½ inches diameter for all thicknesses of board up to approximately .031 inches, or 4½ inches diameter for board of greater thickness, with wood plugs inserted in the ends for supporting the roll in shipment.

Without some suggestions from the cooperative trade press, Paper Trade Associations, etc., an individual mill would rather put up with conditions as they are than raise an issue with its customers at the risk of being told by the customers that if their mill was not willing to accommodate them as to precisely the roll sizes specified, other mills would be only too glad to do so. That is the situation as it stands and accounts for the continuation of an unnecessarily expensive procedure.

As builders of slitting and roll-winding machines for use in paper mills, board mills and plants converting these materials into their products, we have a look-in on the situation as it is and we are in a position to realize what could be achieved without any capital expense and with very little effort.

Any information we have will be respectfully submitted to you; and we are sure that any moves you might make in this direction would be heartily welcomed by the mills and, in the end by the users of the product of the mills, as the bulk of the savings would, in the last analysis, go to the customers of the mills.

Very truly yours,
JAMES A. CAMERON, Pres.,
Cameron Machine Company.

[Mr. Cameron's suggestion is apparently a helpful one that, in the interest of economy, deserves consideration. The PAPER TRADE JOURNAL will be glad to print other views on this subject.—EDITOR.]

Specializing in Forest Management

[FROM OUR REGULAR CORRESPONDENT]

WARRENSBURG, N. Y., July 10, 1929.—Seniors of the New York College of Forestry are specializing in forest management on the Charles Lathrop Pack Demonstration Forest, north of this place. After camp sessions are concluded it is planned to visit the Yale Demonstration Forest at Keene, N. H., and the Harvard Forest at Petersham. The new headquarters house recently constructed sets back in the beautiful white pine grove about one hundred feet from the main highway which traverses the tract for several miles. The house located on the road to Canada will serve as a place for visitors to stop and secure information about the forest and from which parties will also be taken over the forest on trips of inspection. A large assembly hall will be provided where meetings may be held and lectures given.

At the Pack Forest the students engage in making a typical forest management plan including the necessary work in surveying, timber cruising, determination of rate of growth and the amount that can be cut annually or periodically and the best silvicultural policies to pursue on each of the compartments. Every phase of the work from planting the trees to the marketing of the product is included. In charge of instruction are Professor Harold C. Belyea, Svend Heiberg and Clifford H. Foster, director of the Forest. During the spring months the following were planted in the forest: red pine, 9,000; Scotch pine, 6,000; jack pine, 3,000; white pine, 7,000; larch, 5,000; spruce 5,000. In addition to these trees 75,000 transplants of various species were set out on the highway to Canada near this place.

St. Helens Bag Division in Full Operation

[FROM OUR REGULAR CORRESPONDENT]

ST. HELENS, Ore., June 28, 1929.—The Bag Division of the St. Helens Pulp and Paper Company is now in full operation. The capacity of the plant has been increased some 15 per cent through improved factory layout and additional personnel.

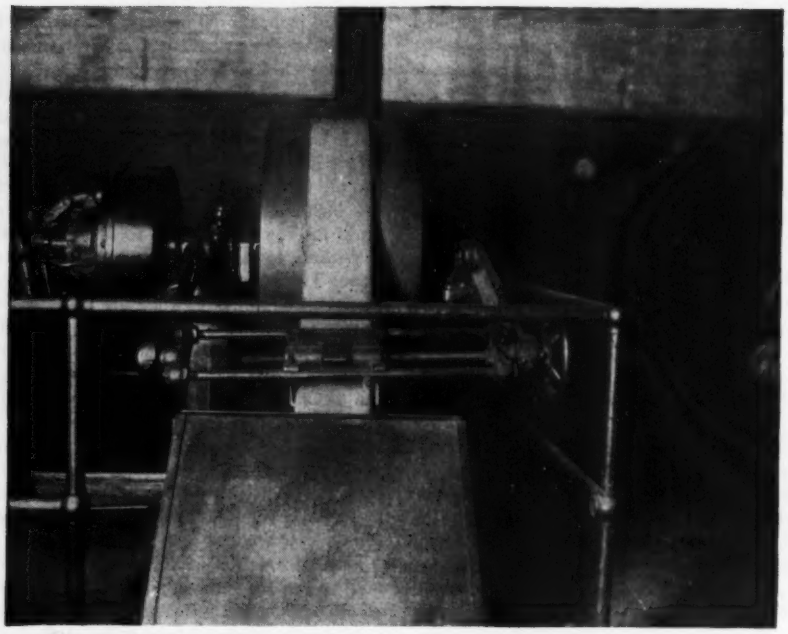

Photo shows a sectional cone drive in a board mill. Highflex belts, because of their remarkable construction principle, are breaking all records on paper mill cone drives. See article below

Highflex belts reduce costly shut-downs resulting from stretch and slipping

BECAUSE the shafts in paper mill cone drives are fixed, it becomes highly important to have a belt with minimum stretch. Owing to their unique construction principle, Goodrich Highflex belts are proving themselves an ideal belt for sectional cone drives.

Highflex belts have excess stretch removed during the process of manufacture. Finished Highflex belts, under tests, show a minimum of inelastic stretch and just enough elastic stretch for proper shock absorption.

The low factor of stretch in Highflex belts, therefore, reduces the frequent —and costly—shut-downs resulting from slipping of old-type belts.

As a result of this feature, Highflex belts also possess a higher power capacity, and last longer. Highflex belting, now running on scores of sectional drives, is breaking all records for length of service before shortening becomes necessary.

The square edges of Highflex belting, because foldless, present a better wearing surface against shifters, and prove their economy through greater immunity to rupture.

Highflex belting is carried in stock in the following sizes especially designed for cone drives: 6″ 6 ply; 8″, 10″, 12″, 14″, 15″ and 18″ 7 ply; as well as 10″, 12″, 14″ and 16″ 8 ply. Cone belts are also made to order in thicknesses up to 10 ply. Some mills have successfully adapted endless Highflex belts, with idler pulleys, to sectional drives.

We will gladly send catalogue 2105 on Highflex belting. Write to The B. F. Goodrich Rubber Co., Akron, O. (in the West, Pacific Goodrich Rubber Co., Los Angeles, Cal.), or fill in the coupon below.

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Vulcalock couch, worm, and press rolls —Highflex belting—Rubber lined pipe and fittings—Fire, water, air and steam hose—Cutless rubber bearings, rubber lined tanks, screen diaphragms, gaskets, packing—Flexite buckets and dippers.

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

Mulch Paper

By Charles W. Rivise

Mulch, or mulsh, is defined in the dictionaries and other reference books as any substance used to protect the roots of plants from heat, cold or drought, or to keep fruit clean. A good all around mulch should be inexpensive and accomplish the following results:—

1. Keep down the rank growth of weeds, especially where labor is a serious problem.

2. Conserve moisture by holding it in the ground, particularly in the dry season and in places where there is very little rainfall. Such a result is best accomplished by breaking the capillarity of the ground and checking evaporation.

3. Shed the moisture resulting from excessive precipitation. This is very important in the rainy season and in places having heavy rainfall.

4. Prevent the ground from packing and keep it loose and pliable while growth is in progress.

5. Prevent the leaching of soluble nitrates used for fertilizer.

6. Conserve the fertilizer by keeping it from the weeds.

7. Absorb and store heat, thus keeping the ground warmer and forcing greater growth.

8. Protect the plant from extreme temperatures.

9. Discourage and destroy insects and other vermin of the field.

Many materials, both natural and artificial, have been tried with more or less success. Among them may be mentioned marsh hay, straw, brush, litter and leaves. Every material that has been used has serious drawbacks. For instance, the vegetable mulches cannot be used in the summer when the soil must be tilled. Furthermore, they not only encourage roots near the surface but also furnish comfortable hiding places for insects and other pests of the farm. On the other hand earthy materials such as surface soil must be kept powdery by frequent tillage, and require a large amount of labor.

The problem of preparing a serviceable mulch is further complicated by the fact that low cost is a very important consideration. Hence, not only must the material be relatively inexpensive, but it must be suitable for more than one season's use. Paper, for many reasons, appears to offer an excellent solution of the problem. In the first place paper can be made out of cheap materials such as wood pulp, wheat, straw and stalks of many plants as well as waste materials such as bagasse. In the second place paper lends itself admirably for special treatment to improve its properties and adaptability for the purpose. In the third place the material may be made in rolls so that it can be easily handled and spread upon the ground. In the fourth place paper is sufficiently strong so that it can be reused several times.

The advantages of paper over all other materials have been proved by the most exacting of tests. Specially treated papers have been found to serve equally for tomatoes in California, tobacco in Connecticut and sugar and pineapples in Hawaii. The tests in Hawaii are especially convincing since no country in the world has a greater variety of rainfall than exists even on one small island of the archipelago.

First Mulch Paper Patent in 1870

The actual use of much paper on a large scale dates back only a few years. However, a search through the files of the United States Patent Office reveals the fact that the use of paper in plant husbandry was first suggested in this country in 1870 by Sterne Brunson in Patent 104,418. The patentee cuts a wide C-shaped strip from a sheet of plain or tarred paper and fits its inner periphery closely about the base of a tree, so that the device takes the shape of a frustrum of a cone. The inner periphery is provided with a series of incisions forming tongues which are bent to start flatly against the tree. The outer periphery of the device is embedded in the soil at a short distance from the tree. Small air holes are provided in the paper to allow the free circulation of air. The purpose of the device is to exclude insects that have the anoying habit of leaving their eggs and progeny in close proximity to the roots. The tar in the paper serves the dual function of being offensive to vermin and shedding the water from the paper. Spring fastening means are provided to allow the device to yield to the growth of the tree.

Though Brunson appears to to have been the first in the country to suggest the use of paper to protect plants, his patent contains but one claim, which is very narrow and covers merely his specific construction. Evidently Brunson and the Patent Office were of the opinion that broadly the use of paper for his purpose involved nothing more than an obvious choice of an old material and the invention, if any, lay in the details of construction. However that may be, his patent has proved to be a stumbling block and a thorn in the sides of later inventors who sought broad protection on paper mulches.

The next patent is to C. S. Wood numbered 619,458 and dated February 14, 1899. This patent discloses the idea of covering the ground with tar paper in the same manner in which roofing felt is applied to a roof. The purpose of the material is to prevent the evaporation and escape of a weed-killing solution which has previously been applied to the soil.

The patent to Larsen No. 728,250 dated May 19, 1903, discloses a cone-shaped cover made of tar or rosin treated paper adapted to protect a growing plant from strong night winds. Though the device cannot by any stretch of the imagination be termed a mulch, the Patent Office has cited it against the second of Eckart's patents, which will be discussed later.

Another patent that has been cited by the Patent Office against waterproof mulch paper is that to Casler Mo. 742,589 dated October 27, 1903. All that this patent shows is a felt roofing provided with tabs to serve as guides and protectors for the nails used to secure the roofing material to the roof structure, but the Patent Examiners consider it as suggesting a feasible method of fastening mulch paper to the ground and have therefore refused broad protection on this feature.

A. DeV. Turner in Patent 921,484 dated May 11, 1909, discloses a square or oblong sheet of resilient waterproofed felt paper, formed with a large central aperture and a series of smaller holes regularly spaced about the central aperture to serve as a berry prop. A slit from one edge of the sheet to the central aperture is provided to facilitate placing the device about a berry plant. The paper sheet forms a barrier between the berries and the sand and the smaller openings serve to drain off the water falling upon the paper.

When Turner filed his application, the Patent Office pointed to the Brunson patent as constituting an anticipation. The Patent Examiner further contended that the use as a much of a waterproofed paper that had long been used as a roofing sheet, involved at the most an obvious substitution of materials. The Patent Office finally was persuaded to allow one very narrow and specific detail claim by affidavits of disinterested parties setting forth certain alleged unobvious advantages resulting from the change in material, including among them the fact that the device effectively keeps sand out of the berries. The further argument that Turner's device is used as a combined berry prop and water shed while Brunson's device was primarily designed to exclude insects from the roots of trees also contributed to the decision that a patentable distinction existed.

Turner's claim reads as follows:—"A berry prop of the character described comprising a flat sheet of comparatively thick, waterproofed, yieldable paper-board provided with an enlarged opening at its central portion and with a plurality of smaller openings surrounding said opening, said sheet being cut on a straight line from one edge thereof to said central opening."

Cowles Patent

The next patent worthy of note is that to Arthur B. Cowles No. 1,110,377 dated Sept. 15, 1924, for a plant protector. To quote the patentee:

"The present invention relates to plant protectors and more particularly to the type employed for protecting young plants against insects, and an object of the invention is to provide an insect-destroying device adapted to surround young plants, while, at the same time, permitting moisture or water to pass to the roots of such plant.

"Another object of the invention is to provide a construction which will permit the plants to grow without injury to such plants.

"To these and other ends the invention consists in certain parts and combination of parts, all of which will be hereinafter described and more particularly pointed out in the appended claims."

The Patent Office records indicate that Cowles' application was rejected upon the Patent to Brunson. The applicant contended that Brunson's device was designated for a tree while his own invention was adapted for small plants; that Brunson's device in use is cone-shaped while his own article lies flat on the ground and that the tongues of Brunson's structure engage the tree throughout the length of the device while the tongues in the invention allow moisture to percolate to the roots. Finally Cowles agreed to accept two narrow claims, limited considerably by the Brunson and Turner patents as well as the Austrian patent to Chanal No. 4806 dated July 25, 1901 and the Swiss patent to Verdun No. 7278, dated August 19, 1893. The Swiss patent last mentioned discloses a flat sheet surrounding a plant and provided with an insect repelling substance.

The claims granted to Cowles read as follows:—

1. As an article of manufacture, a plant protector comprising a sheet of material which contains an insecticide and which is provided with a plurality of slits, one of said slits extending outwardly through the edge of the sheet and all of said slits meeting at a common point and providing flexible tongues which lie closely together so as to prevent the passage of insects through the sheet between the tongues and whereby the eggs of the insects are deposited upon and retained on the flat sheet of material.

2. A plant protector composed of a flat sheet of material containing an insecticide and body portion is adapted to lie flat upon the ground and which is provided with a plurality of slits providing a plurality of tongues whose outer ends are adapted to lie flat on the ground and whose inner ends are adapted to be bent out of the plane of the body to singly embrace plants of various sizes, said slits lying so closely together as to prevent passage of insects through the sheets between the tongues whereby the insect eggs are caused to remain on the body of the flat sheet of material including the outer ends of said tongues rather than on the ground adjacent the root of the plant.

The next patent No. 1,130,545 to W. M. Scott dated Mar. 2, 1915 discloses and claims a method of protecting a tree from the tree borer moth. The method consists of fitting a mat of tarred paper, felt or burlap closely about the tree so that it covers the ground for about six inches on all sides. The mat is provided with a large circular central hole, and a radial slit to facilitate its being put in position. The slit and the space between the mat and the tree is sealed by means of a viscous substance such as soft pitch, coal tar, asphalt, wax or pine tar. Scott's invention differs from that disclosed by Brunson in that Scott's mat conforms to the ground all around the tree whereas Brunson's device touches the ground only at its outer periphery.

The Eckart Patents

The next three patents No. 1,274,527 dated Aug. 6, 1918; 1,276,887 dated August 27, 1918 and 1,372,998 dated March 29, 1921 (reissued as 15,231 dated November 22, 1921) were all granted to C. F. Eckart of Hawaii, who has probably done more than any other man to make mulch papers practicable. In the first of his patents, namely No. 1,274,527 Eckart admits that the use of tar and asphalt felt papers is not a new expedient, but states that their usefulness has been limited by the fact that they are not at all times capable of being penetrated by the sugar cane shoots under the force exerted by the growing of the shoots. He proposes to eliminate this defect by treating the paper with a substance that does not decrease the breaking strength of the paper while dry, but which when slightly moistened causes the paper to become punctured by the pressure of the growing plant. The mulch paper may be made as follows:

A strip or sheet of paper is passed through a bath of caustic soda, caustic potash or caustic lime, the former being preferable. This solution may, of course, be of any desired strength and may be either cold or hot, according to the nature of the paper which is being treated. A hygroscopic or deliquescent salt, such as sodium chloride or calcium chloride for instance, may be added to the caustic solution or applied to the paper by separate treatment, when desirable, to prevent the paper from becoming too dry on subsequent exposure, the salt referred to drawing moisture from the air. If a refractory paper is passed through the bath, it is preferably rolled immediately, that is to say, before it has an opportunity of drying. This permits the caustic soda, caustic potash or caustic lime, whichever is being used, to remain on the paper and to slowly penetrate the same. Of course, on the other hand, if a paper which will readily absorb the solution is being treated, there is no need for the rolling.

When the covering of treated paper is placed upon the rows of sugar cane the sunshine will render it substantially as tough as the untreated paper. When the paper is moistened, even though slightly, it becomes very much softer than the untreated paper and requires considerable less force to puncture it. Rain or even the regular dews are effective to cause the desired softening. The softening is not enough, however, to allow weeds to puncture the

paper. The weeds are therefore effectively excluded. The broadest claim in this patent is limited to paper impregnated with a substance which will render it pervious to the cane shoots and impervious to the weeds.

Patent 1,276,887 has for its object the provision of a mulch to be placed between the rows of growing plants, so that when the rainfall is heavy or frequent, the soil will not become water logged, and thus exclude the air from the roots and which, when the rainfall is scanty, will cause sufficient moisture to be retained within the soil to supply the roots of the growing plants properly. The material consists of a strip of waterproof, opaque flexible material of such width that it will extend between and within a short distance of the plants in adjacent rows. To secure the mulch to the ground a series of long tapered pegs are driven through properly reenforced pegging centers which are provided at regular intervals along both edges of the strip.

All but one of the claims are limited to a strip having specifically made pegging centers while the remaining claim is drawn to a coated strip having reenforcement on one side. The limitations in the claims were made necessary by the U. S. Patents to Wood, Larsen, Casler and Cowles and the Austrian Patents 30,195 and 41,648 to Zwickelstorfer and Schmidt respectively.

Eckart's next patent No. 1,372,998 reissued as No. 15,231 has for its object to quote the patentee "a simple and effective method and means for enhancing the growth of plants, involving the suppression of weeds and deleterious plants, the provision of the suitable soil area about each plant to receive light and moisture, the collection of moisture from rainfall and other sources and the distribution of the same to the soil outside of the defined planting area, and the development of ideal conditions of heat and moisture in the soil adjacent the planting areas which will materially enhance the growth and development of the plant roots, as well as the rapid development of the plants proper, so that the yield from the latter will be greatly augmented."

The mulch consists of a long strip of flexible, dark colored, waterproofed, heat-absorbing paper which is to be laid in surface contact with the ground in which the plants or plant producing stock are to be set or may have already been set. The paper is impregnated with tar, asphalt or pitch. At regular intervals corresponding to the soil areas in which the individual plants are to be located, the paper is provided with two cross cuts or slits which intersect each other to form four triangular flags, which can be folded back to form a substantially square opening for the plant. About the sides of the opening there are provided a second series of slits, which serve to receive the outer ends of the flaps when they are folded back to lock them in position and form an inclined rim to deflect any weed seeds and to direct the greater part of the moisture away from the plant openings and through the said slits. In order that any moisture from rains falling upon the mulch may be directed into the soil surrounding the planting area, the inventor provides elongated slits arranged in rectangular formation along the length of the strip. This naturally results in a greater growth of roots which tend to ramify into the warm moist areas thus provided.

The mulch may be used in one of two ways. The first mode consists in laying the paper before the crop is planted so as to eliminate the weeds by cutting off the necessary supply of light and air. Then the flaps are bent back to provide the planting area for the regular crop. The other mode consists in planting the crop first and then laying the mulch with the flaps bent back to receive the growing shoots within the rectangular openings.

This patent contains 17 claims all of which are limited by the disclosures of the patents that have already been discussed. The broadest claim is claim 14 which reads as follows:

A mulch for enhancing the growth of plants comprising a flexible sheet of opaque heat-absorbing material provided with drainage openings disposed at intervals to deliver drainage water to areas of the soil beneath the mulch.

Particularly in view of the patent to Turner, which shows a tar impregnated sheet perforated at a plurality of points for the purpose of drainage, this claim must be narrowly construed to avoid its being held invalid by the Courts. Claims 16 and 17 which include the planting openings must also be narrowly construed in view of the patent to Turner which shows a large central circular opening and the patent to Cowles which shows an opening made by interesting slits.

The last patent to be considered is that to C. A. Adams, No. 1,584,589 dated May 11, 1926 for a berry protector and plant mulch. The device disclosed consists of an elongated laminated sheet, the lower layer of which is plain and the upper layer of which has transverse corrugations to carry off the water and to keep the berries from coming into contact with the water. Some of the corrugations may be provided with openings to trap obnoxious insects. The sheet is provided with a longitudinal slot opening from one end so that the device may be made to straddle the stems of several plants. A plurality of such sheets are employed for each row and their ends are disposed in overlapping relation. A variation consists in making the sheet of one ply of corrugated material. All the three claims contain the limitation of the longitudinal slot and one also includes the tranversely extending ribs to carry off the moisture.

Of the patents that have been discussed, those to Brunson, Wood, Turner, Larsen and Casler have already expired and the foreign patents are not in force in this country. Their disclosures are, therefore, public property and any member of the public can practice anything described therein with impunity. Furthermore the public may freely avail itself of anything disclosed but not claimed in the unexpired patents. In other words, any one may rightfully use anything disclosed in any of the patents under discussion unless it is covered by a claim in a subsisting patent. To summarize in a broad general way, any one may use a treated or untreated paper as a mulch, whether or not the sheet is provided with air or drainage holes and whether or not it is provided with a central aperture to accommodate a growing plant, provided however, that the structure does not fall within the scope of any of the claims in the patents to Cowles, Scott, Eckart and Adams. And since the claims in these patents have been drawn very narrowly to avoid the prior patents, it would not be a difficult matter to design a non-infringing paper mulch. In fact several companies are putting out successful paper mulches that are not covered by patents.

The question has arisen whether the pioneers in paper mulches may prevent later comers in the field from calling their products "paper mulches". The question is very simple. The term being descriptive of both the function and properties of the product is not susceptible to exclude appropriation as a trade-mark. Therefore, any one can use the term "paper mulch" with as much liberty as one can use the word "paper" or the word "candy" for that matter. And that is as it should be, as otherwise the first manufacturer would in effect have a perpetual monopoly on selling paper mulches. For obviously another manufacturer could not sell his product if he were restrained from calling it by its descriptive name. However, the laws of unfair competition will protect a dealer who has built up a valuable business and good will from a dishonest competitor who attempts to palm all his goods as the same or as a "just-as-good" by dressing it up in a deceptive manner. This latter protection is often more effective than even a suit for infringement under a patent or a trade-mark.

L. J. Parent on Maine Commission

WOODLAND, Me., July 10, 1929.—Governor Gardiner has nominated L. J. Parent, general manager of the St. Croix Paper Company, on the commission on revision of the State Sunday laws.

The Commission will consider the advisability of legislation repealing or amending the Sunday law of the State and especially advisability of legislation permitting amateur games and sports on Sunday.

Evaporation

By Philip DeWolf[1]

When water in the liquid phase is heated, it first rises in temperature by absorption of heat. This is sensible heat, and finally comes to a point, depending upon the liquid and the pressure, where the temperature ceases to rise; but the liquid keeps on absorbing heat until it bursts into vapor, which is the same temperature as the pure liquid. You can then take the vapor away and heat it as you would any other gas, and it will absorb more sensible heat and go up in temperature.

Now, this heat that goes in without raising the temperature and finally vaporizes the liquid is called latent heat of vaporization. For instance, it takes 152 B. T. U. to raise a pound of water from 70 to 212 deg. F., but it takes 965 B. T. U. to transform that water at 212 degrees into steam at the same temperature. If this vapor is cooled below the boiling point, it condenses to a liquid again, and gives up the latent heat.

Heat flows from the warm to cold. If a pipe runs through water and steam flows through the pipe, heat passes through the pipe wall from the steam to the water. To provide this heat to pass through, steam condenses and the latent heat is available.

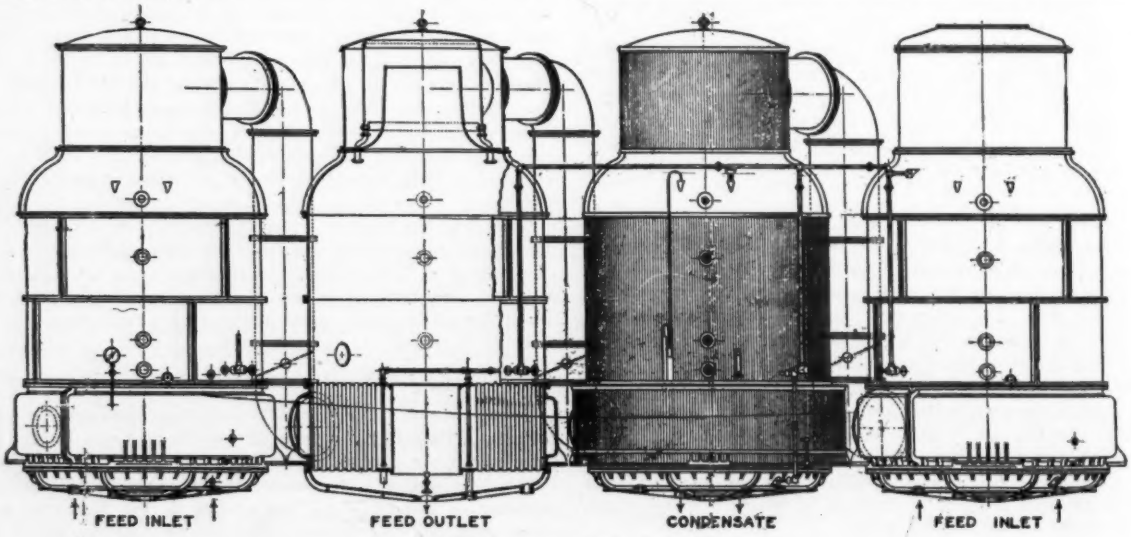
The subject of heat transfer is one that cannot be taken up here. For our purpose it is enough to say that the vapor confined within a metal casing will, if the outside of the casing is cool enough, condense and give up its latent heat of evaporation. This latent heat will pass through the metal wall just as sensible heat does and can be used in the other side. The rate of passing through depends upon the material of which the wall is made, to a very great extent, and upon its thickness. The unit used for heat transfer is B. T. U. per sq. ft. per hour per degree of temperature, per one foot thick.

If the metal wall was the only thing through which the heat passed it would be very simple to design evaporators. We know within very close limits the heat transfer rate for all the commonly used metals, but complications come in due to the formation of film and the deposition of dirt of various kinds on the side of the metal wall.

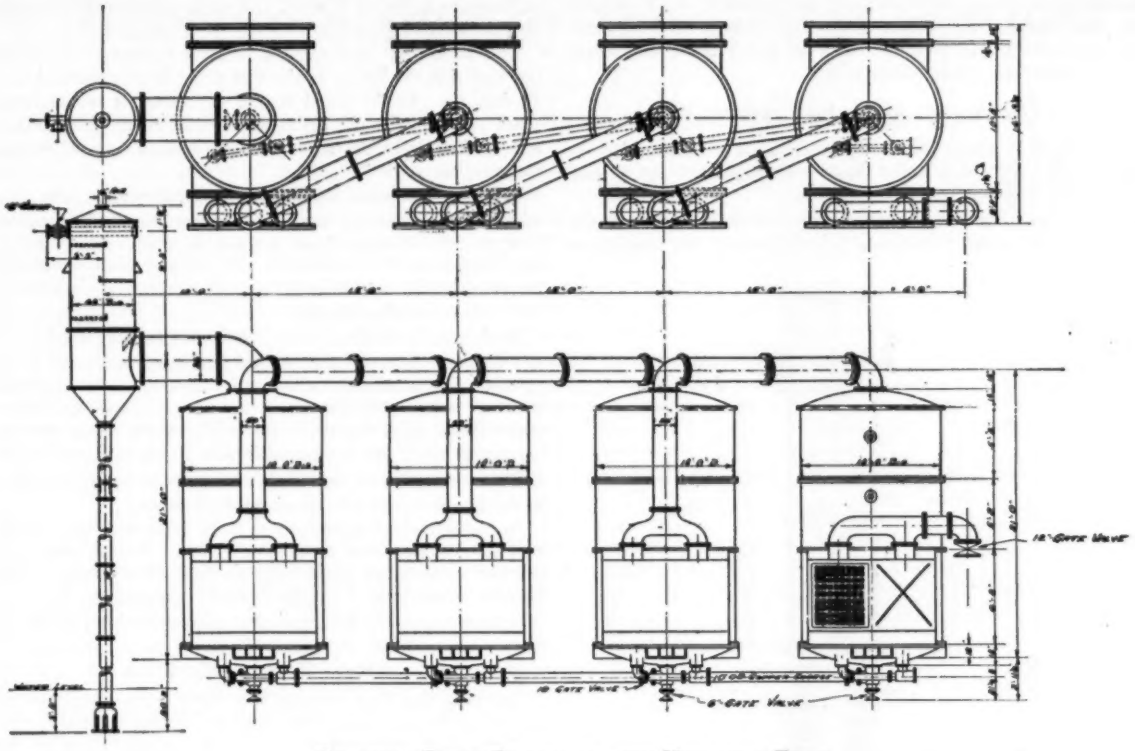
The heat taken through the tube wall is used to evaporate a liquid and this liquid rests against the other side of the tube. It is cooler than the vapor on the vapor side and the heat given up by the condensing vapor passes through the metal to the liquid and boils the liquid. It is on this side that most of the dirt deposits and the film here can be controlled. The film is cut down by rapid passage of the liquor through the tube but this passage may be too fast. It is not always economy to force the liquor by faster than it would flow naturally. The vapor goes into the steam chest. In the first effect it is usually low pressure process steam. The liquor is all around the tubes in the bottom of the evaporator. The latent heat and a certain amount of sensible heat passes through from the vapor space to the liquor and heats the liquor. The condensed steam runs down to the bottom of the vapor space, usually called the calandria, and is removed through a trap or pump. It may be used to help the evaporation further on or it may go back to the plant as hot distilled water. It has, however, given up the bulk of its heat.

To illustrate this steam at 226 deg. F. which is 5 pounds gauge, has received about 176 B. T. U. to heat it up from room temperature but it has also about 960 B. T. U's of latent heat, therefore between 80 and 90 per cent of the heat in the vapor has been removed by condensing. The effect itself is kept under a lower vacuum than in the steam chest, which of course means the liquor boils at lower temperature and it is because of that fact that the latent heat finds a cooler place to flow to. This lower pressure is built up from the last end which is connected to a condenser and the vacuum is kept as high as possible. The sequence in a quadruple effect such as we are showing here is 5 pounds of steam at 226 in the first calandria zero pressure in the first liquor space, which means a drop in temperature of 16 degrees. Of course, the vapor in the second calandria will be at the same pressure as in the previous liquor space as they are directly connected with no valves and the loss from radiation is negligible. That means the temperature in the second calandria is 212 deg. F. Under normal circumstances, the pressure in the second liquor space will be 8 inches of vacuum or a temperature of 196 deg. F. which means that the liquor surrounding the calandria is cool enough to condense the vapor in the second calandria and the latent heat will flow through and boil the liquor. That is repeated in the third effect where the vapor space is under vacuum

[1] Assoc. Member TAPPI; Evaporator Engineer, Joubert & Goslin Machine & Foundry Co., New York, N. Y.



STANDARD VERTICAL EFFECT EVAPORATORS



QUADRUPLE-EFFECT EVAPORATORS WITH HORIZONTAL TUBES.

of about 18 inches and the fourth effect where the vacuum will be kept anywhere from 1½ to 3 inches below barometer, depending on kind of material to be evaporated. The whole principle of multiple effect evaporation involves the use of the latent heat over and over again. I have heard of twelve effects being used in making distilled water on shipboard. Of course, in this case they started with very high pressure steam and ran down as low as possible, making a lot of distilled water with a small quantity of steam. It is not even theoretically possible to evaporate one pound of water with a pound of steam because as we go down the scale in pressure the latent heat increases, but with good apparatus and good operation, you can evaporate anywhere from .85 to .90 pounds of water per pound of vapor that goes in. There is not time to go into the different types of evaporators at all thoroughly. The type is determined in the specific case by the condition. One square foot which is taken as the unit of heating surface will evaporate the same amount of water, irrespective of the type of machine, if conditions of pressure, temperature, liquor and cleanliness (and cleanliness is probably the most important) are the same.

Standard Vertical Effect

The standard vertical effect is used where possible. The advantages are simplicity of construction and cheapness and in addition good circulation and easy cleaning. On the cost of plant, on large machines, three dollars worth of this type of machine will do the work of five dollars worth of the next most used type which is horizontal. The cleaning is very simply accomplished by a man standing on the upper tube sheet and using a wire brush or ordinary brush, or in the evaporation of salt where the gypsum precipitates out, an air drill is used. The basket type of machine is very similar in principle. Instead of a central downtake, tubes are all set in basket and circulation is dqwn the annular space between basket and walls.

One great objection to this basket type of construction is the increased possibility of leaking.

Horizontal Type

Horizontal tube machines are the same in principle except that the tubes are fastened at both ends, horizontally, as shown, while vapor is inside the tubes and the liquid is outside. This machine is used, as an illustration, very largely on evaporation of black liquor in making sulphate pulp. Some of the organic sulphur compounds break down to sulphuric acid and it seems to be the top of the tubes that are affected. That, of course, means that the tube is destroyed and has to be entirely removed if the tube is vertical. In horizontal tube machines only a few layers of tube are destroyed and can be readily replaced. If the liquor dirties up the tubes very badly they can best be cleaned by removing and tumbling in a regular tube mill, which of course is expensive. Also the machine itself will cost 60 per cent more for the same area than a vertical type under the same circumstances.

Kestner uses a different modification of circulation. Tubes are vertical and very long (23 feet). The liquor only stands 18 inches high in the tubes but because of the great area and great amount of heat transferred, the vapors race up these tubes, carrying by entrainment the liquor which is separated by the baffle at the top, and goes on to the next effect.

The Buffalo foundry has another type using long tubes but filling them full of liquor and getting very rapid circulation and very good results. The Swenson Company and others get the same results by letting the liquor flow into the intake of a centrifugal pump, which pumps directly through the pump, making rapid, good circulation and high heat transfer because of the cleanliness of the tubes.

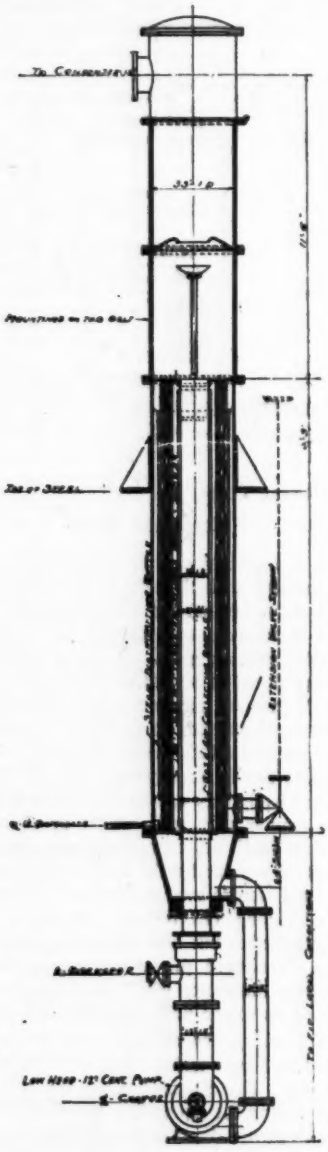
A great deal of work is being done on corrosion resisting materials for tubes but there is no opportunity to say very much about that now. It can be said, though, that a good many of the big caustic soda producing companies have found it worth while to use nickel at its high price instead of steel at its relatively low price or copper with its intermediary price position, because of its chemical properties. Some of the paper mills in erecting new

evaporators put in a few tubes of, for instance, KA2 chrome alloy steel, some nickel tubes, some Monel, some copper, some steel, or anything else they can think of and after a sufficiently long test, adopt the most effective one.

Evaporators in the Pulp Industry

In the paper industry evaporators come in three major departments. Soda pulp black liquor has been evaporated for a long time, and the process is well known.

Sulphate black liquor is a very complex material. Perhaps the best way to talk about evaporating it is to describe the evaporator



FORCED CIRCULATION HIGH CONCENTRATOR.

Joubert & Goslin have just supplied to the Gulf States Paper Co. in Tuscaloosa, Alabama.

They supply a liquor of 10 deg. Be or 17 per cent solids. Until this liquor gets up to about 15 deg. Be it is pretty wild and it foams considerably. The foam is very substantial and it is not carried up as bubbles in the ascending vapor stream but it simply remains a pile of bubbles, and while a baffle are of some help, no catchall will do much.

This foam must be prevented and that is done by so distributing the feed that the liquor in the first effect is concentrated up above 15 deg. Be. In the usual course of events, it would have been about 11.28 deg. Be. So by letting it stay longer in the first effect, and feeding it to the second effect, without loss of evaporation capacity, the work is done.

Viscosity increases rapidly with concentration. The liquor is so thick at 33 deg. Be that it is hard to handle at the low temperature of 110 deg. F. of the fourth effect. The 4th effect is therefore made the last effect. The liquor is then pumped to a Swenson rapid circulation evaporator where it is concentrated still further for the furnaces.

Much remains to be learned about evaporating sulphate liquor. We do know however that the sulphur compounds can be broken up into sulphur dioxide, which may become sulphur trioxide, and at once unite with the water present to form sulphuric acid, which is not good for steel tubes. Therefore this evaporator has horizontal tubes put in conventionally, but spread out in the tube sheet to the full diameter of the vessel so as to provide for many more than the conventional number of tubes.

In the writer's opinion the sulphite mills are only waiting for evaporators that will stand the attacks of their liquor before starting to save and utilize what is now thrown away. The new Enduro steel may have the desired properties. It is certain that some alloy will be found that will solve this problem.

New TAPPI Members

The following have recently been admitted to membership in the Technical Association of the Pulp and Paper Industry.

G. Asplund, Pulp and Paper Attache, Royal Consul of Sweden, 70 East 45th street, New York.

Linn Bradley, Secretary, Bradley-McKeefe Corporation, 522 Fifth avenue, New York, N. Y.

H. S. Bristol, Chemical Engineer, International Paper Company, Bureau of Tests, Glens Falls, N. Y.

Duncan Cameron, Papermaking Apprentice, Cooke & Nuttall, Horwich, Lancashire, England.

Ronald C. Cowan, Director, Valleyfield Paper Mills, Penicuik, Midlothian, Scotland.

Homer Eaton, Assistant Chemical Engineer, Newton Falls Paper Company, Newton Falls, N. Y.

F. S. Farley, Chief Mechanical Engineer, D. Manson Sutherland, Jr., Broad Street Bank Bldg., Trenton, N. J.

S. T. Johnson, Assistant Production Manager, U. S. Gypsum Company, Chicago, Ill.

Dr. K. G. Jonas, Director, Institute of Cellulose, Darmstadt, Germany.

A. J. Luth, Chemist, Nekoosa Edwards Paper Company,, Port Edwards, Wis.

W. M. Osborne, Chief Chemist, Grays Harbor Pulp Company, Hoquiam, Wash.

A. B. Perlick, Assistant Chemist, Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich.

Henry Perry, Chemist, A. D. Little, Inc., Cambridge, Mass.

P. Sandwell, Resident Engineer, Powell River Company, Powell River, B. C.

Birger Sundfeldt, Managing Director, Munksunds, Munksunds, Sweden.

New TAPPI Corporate Members

The Jessup & Moore Paper Company, Commercial Trust Building, Philadelphia, Pa., and the Tomahawk Kraft Paper Company, Tomahawk, Wis., have become corporate members of the Technical Association of the Pulp and Paper Industry.

Cherry River Paper Company, of Richwood, W. Va., has joined the Technical Association of the Pulp and Paper Industry. C. H. Morian, vice-president, will be representative.

Bakelite Sizing by the Beater Method

By Joseph Rossman [1]

Hundreds of patents have been granted during the last few years for the use of phenolic resins such as Bakelite in the industries. Phenolic resins have been utilized in many processes which require a thermoplastic material. One of the earliest U. S. patents No. 1,160,362 granted to Bakeland on March 16, 1915, discloses the use of phenolic resins in paper making. The process disclosed by the patent is as follows: Instead of mixing and grinding the fibrous materials in a dry state with substances capable of yielding an infusible condensation product, the fibrous materials are mixed in the presence of water in suitable proportions with such substances, the water being afterward eliminated from the mass by a process of drying. The wet mixing or grinding can be accomplished in a beater as practised in the art of paper making, or in other suitable device. For this purpose, mechanical pulp, sulfite pulp, soda pulp, asbestos, rags, cotton, linen, esparto grass, or any fibrous materials as can be used for paper making, are finely divided and mixed in presence of water in suitable proportions and with the substances designated above, namely, phenols and formaldehyde in proper porportion of their first reaction products, which under the action of heat and pressure, can furnish the infusible condensation products of formaldehyde and phenols, and are ground or beaten before or after. As starting point for the infusible condensation products of phenols and formaldehyde, any suitable partial reaction products of same, either in liquid, in pasty or in solid form, or even a mixture of phenolic body with formaldehyde can be used. Any of these can be used with or without the addition of suitable condensing agents. In the former case, alkaline solutions of the phenols and formaldehyde mixture or of the partial reaction products of same can be used, and the proportion of alkali used is not important or material, so long as any undesired excess thereof is eventually neutralized or eliminated by the addition of an acid or an acid salt or a suitable salt which by double decomposition eliminates the excess of alkali. Salts of aluminum, copper, iron, zinc, nickel, cobalt, and in general such salts as produce insoluble hydroxids in presence of alkaline solutions may be found to produce this effect. The addition of these salts for the elimination of excess of alkaline condensing agent has the further advantage of modifying the color of the product and of furnishing a suitable filler and sizing. Any of the above mentioned partial reaction products of phenols and formaldehyde, and more especially the liquid varieties of these, as well as the liquid mixture of phenols and formaldehyde, can be used alone or in conjunction with thickening materials, as for instance, starch and gelatinous bodies, which tend to emulsify or suspend them better. The term partial reaction products of phenols and formaldehyde designates any product resulting from the direct or indirect action of a phenolic body on formaldehyde or equivalent methylene-containing substances, and which under the suitable action of heat and pressure, can be converted directly or indirectly into a final, hard, infusible condensation product of phenols and formaldehyde. It is an avantageous feature of the present process that the beating in presence of water tends to eliminate from such partial reaction products any excess of uncombined phenols, the presence of which might be objectionable in the finished product. The mixture can be varied so as to contain suitable filling materials, like china clay, soap stone, pulverized mica, aluminum powder, or in fact, any suitable inorganic or organic fillers which may be desirable as increasing the technical virtue or appearance of the finished products, or which may simplify the manufacture or commercial treatment. For instance, a certain amount of pulverized final condensation product can be added. In the same way, coloring agents may be employed. In some cases, it becomes desirable to add some sizing material, and for this purpose, any of the numerous sizing materials, which have been proposed, or which have been used, in paper making, can be resorted to, as for instance, starch, glue, resinous soaps, etc. Very appropriate sizing materials which can be used in the preparation of these plastic mixtures and also for general paper making purposes, are the initial reaction products of phenols and formaldehyde themselves, or alkaline solutions thereof. An alkaline solution of partial condensation products, or an alkaline solution of the soluble, fusible condensation products of formaldehyde and phenols may be used. The most convenient and quickest way for drying the mass is to convert it into paper or a paper-like body. The mass, after going through the usual operations as practised in the art of paper making, may be further submitted to any other treatment, as for instance, calendering; but in most cases, the paper prepared as above described can be used in its raw uncalendered state.

[1] Patent Examiner, U. S. Patent Office, Washington, D. C.

Paper May be Transformed to Plastic Materials

This paper can be stored away indefinitely for future use; its ease of handling, freighting, transporting, cutting and shaping, make it an unusually excellent starting point for molding and forming all kinds of articles. This not only reduces the cost of manufacture but renders the methods of operation more regular and certain. The process of molding is hereby reduced to its very simplest expression, relieving the manufacturer of molded articles of all other chemical or preliminary operations, and merely restricting his skill to relatively easy manufacturing methods, which mainly consist in hot pressing this special paper in suitable molds or devices. For instance, in the manufacture of buttons, the sheets are simply pressed between hot plates so as to transform them into hard, finished sheets or blocks, from which afterward disks can be stamped or cut, or buttons can be turned on the lathe by means of suitable devices. Or again, the raw paper can directly be pressed in hot button molds. In either case, the application of heat and pressure not only gives shape to the articles, but transforms the lower condensation products of phenols and formaldehyde into the higher stages of condensation, which are infusible. The same process can be followed for the manufacture of knife handles, umbrella handles, billiard balls, pipe stems, trays, fancy articles, furniture, musical instruments, mechanical devices, boxes, trunks, etc. In order to increase the gloss or appearance, the paper can be dusted over, or otherwise covered, with partial condensation products of phenols and formaldehyde, in a continuous superficial layer, or in powder form, either during the act of manufacture of the paper, or any time afterward; or the molds or plates in which the paper is pressed, can be coated by dusting on, by sprinkling, or otherwise, these partial condensation products in powder form, or by applying them in any other condition. Paper of different colors or of different composition may be mixed or combined together in various ways so as to obtain during the act of hot pressing, numerous fancy articles or technical results, as marbelizing, tortoise shell effects, mottling, etc.

The next patent No. 1,160,365 granted to Bakeland discloses the same process except that it claims some features not claimed in the first patent.

Paper and Pulp Board

A more recent U. S. patent No. 1,551,428, August 25, 1925 to Redman and Cheetham discloses the following process for making card-board, composite or laminated products. The fiber in water suspension is beaten, for example in paper beaters, or other suitable type of beating engine, with a mixture comprising as its essential components a phenol resin of the so-called permanently fusible and soluble type, otherwise known as a non-reactive phenol resin; a methylene-containing hardening agent, preferably hexamethylenetetramine; and a free phenolic body. For the best results it is necessary to observe certain precautions as to the proportioning of these several components; although as will appear

hereinafter, there exist an indefinite number of proportions conforming to these general requirements, and the plasticity of the product can be varied at will to conform to special requirements. The phenol resins, as preferably employed for the purposes of this invention, are of the hard, brittle, easily pulverizable non-reactive type, containing a greater or less proportion of free phenol. It is essential for securing the most desirable plasticity in the product that this free phenol should be retained by the resin during the beating operation. Water, however, will quickly eliminate free phenol from the finely powered resin, and for this reason we add to the water in the beater sufficient free phenol to effect its substantial saturation, thereby preventing it from extracting free phenol from the resin. From 5 to 8 per cent of phenol or less, based on the weight of the water, will usually suffice, the amount varying of course with the temperature, with the particular kind of phenol or cresol employed, etc. The hardening agent which is preferably hexamethylenetetramine, is used in sufficient proportion to unite with and harden the fusible resin, forming therewith in the first instance a potentially reactive composition; and in sufficient excess of such proportion to react with the phenol present in the resin and in the water, forming with this phenol either a non-reactive resin or a potentially reactive resin, according to the particular properties desired in the product, in which non-reactive resin, if present, is capable of acting as a plasticizer. A typical formula comprises: 450 pounds non-reactive phenol resin, 500 pounds cotton or paper pulp, 7500 pounds water, 375 pounds commercial phenol, and 240 pounds hexamethylenetetramine. The resin is first finely powdered, preferably to pass 100 mesh. The fiber may advantageously be a mixture of cotton flock and sulfite pulp, although any suitable fiber or fiber-mixture, including asbestos, may be used. The hexamethy lenetetramine may be substituted wholly or in part by an equivalent proportion of formaldehyde or other aldehyde capable of hardening the resin and of reacting with the phenol. Other phenolic bodies may of course replace phenol. A small proportion of any suitable "release material" or lubricant, preferably calcium stearate in powdered form is added. The whole mass is now beaten to a homogeneous pulp after the manner of making paper and is then run onto the screens, applying such vacuum as will leave in the wet paper approximately one pound of water for each pound of dry paper. The paper may then be dried either by running through warm calendering rolls or by passing through a drying over, care being taken in either case that the chemical reaction between the phenol resin, the phenol, and the hexamethylenetetramine or formaldehyde does not then proceed to the final reaction stage, but that the resin content of the paper remains potentially reactive. When the paper is used for making a laminated product, the final reaction occurs during the hot-pressure consolidation of the laminae.

Insulating Paper

U. S. Patent No. 1,630,424, May 31, 1927 to Haanen makes insulating paper employing phenolic resins. The water of pulps of fibrous material of any kind is first of all replaced in a suitable manner, for instance in displacing apparatus, by a solvent for phenol resins, for instance alcohol. Solutions containing phenol resins are added to the mass obtained in this manner and by introducing the well mixed mass into water, the phenol resin is precipitated in it and on the fibre. The resin contained in the fibre can be left as it is or converted by heat into the C-state, according to the working up processes employed and the purposes in view. The resulting paper pulp is used for the manufacture of paper or hard paper as well as, after drying, for the production of pressed articles. The papers produced according to the process can be successfully used as insulation for high tension cables, the grading according to the dielectric constants, desirable therefor being obtained by the different percentage content of phenol resin in the various layers of paper.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

Machinery

Slitting and Winding Kraft Papers. Anon. Pulp & Paper 26, 1237, 1250 (Sept. 6, 1928). Results are given of a survey of the slitting and rewinding equipment of the Monroe, La., mill of the Brown Paper Co., comprising three type DA Langston slitting and rewinding machines. A. P.-C.

Paper Slitter. G. Meyer-Jagenberg. Eng. pate. 292,449. The cutters cooperate with a grooved roll mounted on a frame slidable in vertical guides. The cutter roll is supported on the rolled web which rests on driven rolls and acts as a pressure roll. The cutters are secured by brackets to a shaft and are mounted on eccentric shafts. When the operating lever is moved, cam surfaces move the knives laterally free of the edges of the grooves and the shaft then lifts the knives. The grooves are bevelled on one edge to bend the cut edges of the web apart and prevent overlapping. A. P.-C.

Drive for Calenders. Waterbury Tool Co. Eng. pat. 292,157. The rolls of the calenders are driven by a hydraulic variable speed transmission gear comprising a pump and a motor, conduits connecting the pump and the motor, the shaft of the motor carrying a pinion in mesh with a spur gear on the shaft of one of the calender rolls. The motor and pump are similar, but inclination to the normal of the tilting box for the swash plate of the pump is variable, thus allowing the calender to be driven at any requisite speed between that required for threading the paper through the rolls and its maximum. A hand wheel acting through bevel gears effects this adjustment, the stroke of the pistons and the amount of fluid delivered by the pump to drive the motor being thus regulated. An electric motor is coupled to the shaft of the pump. By opening a bye-pass valve between the pipes connecting the pump and calender-driving motor, which valve is operable by a rod and lever, the drive may be shut off instantly and the machine stopped. A. P.-C.

Paper Specialties

Making News Print at Higher Speeds. C. O. Bachman. Paper Mill 51, No. 29, 4 (July 21, 1928). A brief outline of a few of the fundamental changes required in order to increase the speed of paper machines to 2,000 feet per minute and over A. P.-C.

Tracing Paper: Some Micro-Phenomena. James Scott. Paper Maker & Brit. Paper Trade J. International No. 100-102 (1928). An illustrated descriptive of the appearance under the microscope of frost-grey tracing paper as such and after marking with black lead pencil, writing ink and drawing ink. A. P.-C.

Formation of High Speed News. Anon. Paper Ind. 10, 993-994 (Sept. 1928). The author is of the opinion that production of newsprint of satisfactory quality on present day high-speed fourdriniers is obtained only by sacrificing groundwood output per stone and increasing grinding costs, so as to obtain the required slowness to operate satisfactorily. He con-

siders that a cylinder machine could be developed on which a good grade of news could be made at a speed of 2,000 feet per minute more cheaply than it is now being made at 1,000 feet on fourdriniers. A. P.-C.

Paper for the Offset Press. Anon. World's Paper Trade rev. 89, 1890-1894 (June 8, 1928). A discussion of some of the paper difficulties which may be encountered in offset lithography and of the requirements of paper to be used for this purpose. A. P.-C.

Drying Cardboard, etc. — Schilde Maschinenbau Akt.-Ges. Eng. pat. 288,139. Cardboard, etc., is conveyed through a drying chamber so that its points of support are changed continuously, and preferably progressively decreased to avoid the formation of blemishes in the surface of the material. The cardboard may be conveyed on endless bands mounted on pulleys arranged in laterally staggered planes, or on similarly disposed rollers, or on rotary disks. It may be supported on wires carried by transverse bars and conveyed by rotary spiral arms disposed between the bars. The cardboard may also be supported and conveyed by wires carried by vertically and horizontally reciprocating frames. A. P.-C.

Paper Coating. H. E. Hutton. World's Paper Trade Rev. 89, 1788-1794 (June 1), 1878-1882, 1938, 1940 (June 8, 1928); Paper Mill 51, No. 25, 18-26 (June 23, 1928). A description of the manufacture of coated papers, outlining the variations in treatment to which it is subjected according to its destination. A. P.-C.

Parchment Glassine and Imitation Parchment Papers. Fritz Hoyer. Kunststoffe 18, 154-156 (1928); Chem. Abs. 22, 3776. Parchment (pergament) paper is produced by a suitable surface treatment with chemicals. Glassine (pergamyn) on the other hand, is produced by appropriate beater treatment. Imitation parchment is produced similarly to glassine, but lacks its transparency, glassines, water and greaseproof qualities, etc. the similarity to glassine being attained by high calendering and being only superficial. All of these papers are used for wrapping of food stuffs and greasy materials. Their manufacture is described. C. J. W.

Softening Parchment Paper. J. Y. Johnson. Eng. pat. 292,-430. Parchment paper is softened by treatment with sorbitol or its dehydration products obtainable from sorbitol by splitting off water from the molecule by heat applied, for example, in the presence of catalysts, and if desired, in an aqueous medium under pressure, and preferably, in the presence of acids, salts, or bases of the products obtainable by the action of chemical agents on sorbitol or its dehydration products, or with mixtures of any of these substances. Other substances, such as other polyvalent alcohols, e. g., glycerol or glycol, or sodium lactate, or inorganic hygroscopic salts, may also be added. Sorbitol and its derivatives may be mixed with paper pulp or applied to the paper at any stage of its manufacture. A. P.-C.

Art Paper, Etc. Sieben-Hirtner Chem. Indust. Werk Ges. Eng. pat. 287,559. A paper of high gloss and pure white color, suitable for art print papers, chrome cartons, substitute papers, and the like, is obtained by adding to the pulp a paste consisting of saponified stearine to which is added a heavy metal salt, preferably a zinc salt. For example, 10 parts of stearine are saponified with 20 to 25 parts of caustic soda; to this 200 lbs. of a 5% solution of zinc sulphate are added, and the necessary quantity of potassium or sodium silicate to obtain a substance of marketable consistency. A. P.-C.

Manufacture of Safety Paper II. Chemical Surfacing of Paper. Joseph Rossman. Paper Tr. J. 87, No. 12, 56-60 (Sept. 20, 1928). Abstracts of U. S. patents on methods of making safety paper in which the finished paper is treated superficially in some way as by impregnation with chemicals which will be discolored by ink eradicators, or is subjected to special printing methods. A. P.-C.

Manufacture of Safety Paper I. Special Paper Structure. Joseph Rossman, Paper Trade J. 87, No. 10, 61-64 (Sept. 6, 1928). Abstracts of U. S. patents on the production of safety paper by the incorporation of the materials during the papermaking. A. P.-C.

Manufacture of Wadding from Cellulose. J. A. Colin. Mon. Paperterie Belge 8, 391-397 (June 1928). A detailed description of the raw materials used and of the equipment and process used for its manufacture. A. P.-C.

Electric Insulating Paper. Plastic, Inc. Eng. pat. 287,538. In a process for making paper which is resistant to electricity, heat, etc. kelp is incorporated with the pulp which is formed into a paper web. This kelp is preferably solubilized, e. g., by digestion with caustic soda or other alkali, and is precipitated after admixture with the pulp by a solution of a metallic salt such as zinc sulphate or calcium acetate. Alternatively, lime or a mineral acid may be used. If desired a binder such as rubber and an inert filler may be added prior to precipitation. A. P.-C.

Impregnated Paper. Spicers, Ltd. Eng. pat. 290,625. An emulsion of hard wax is incorporated in the pulp. Agents adapted to secure precipitation of the wax on the fibers are added to the emulsion, and a product is obtained which contains a proportion of hard wax considerably less than 30 per cent of the dry weight of the fiber. A substitute for presspahn or for vulcanized fiber is thus obtained. The wax is preferably first fused and heated to 230° to 250°C. while air is blown through. The emulsion thereof may contain organic solvents for the hard wax, such as carbon tetrachloride, with or without the addition of casein, fats, oils, or soaps, resin, or fatty acid soaps, and similar material and resins singly or in combination one with another. The emulsion may be used in association with known sizing agents. A. P.-C.

Power

Handling Newsprint Electrically. E. W. Holden. Pulp and Paper 26, 1133-1134 (Aug. 16, 1928). A brief discussion of the usefulness of electric trucks for handling paper rolls. A. P. C.

Motor Drive for Bag and Envelope Machines. O. C. Cordes. Paper Ind. 10, 1011-1012 (Sept. 1928). A brief discussion of the suitability of the individual motor drive for bag and envelope machines and of its advantages. A. P.-C.

Belts and Belting. Reginald Trautschold. Paper Trade J. 87, 4, 35-44 (July 26,1928). An illustrated discussion of the service required of belts in paper mills, and of the types of belting best suited for various services. A. P.-C.

Speed Reducer Applicatitns. Reginald Trautschold. Paper Trade J. 87, No. 6, 42-52 (Aug. 9, 1928). An illustrated description of applications of various types of speed reducers in American paper mills. A. P.-C.

Oxy-Acetylene Welding Reduces Overhead in the Paper Mill. Anon. Paper Trade J. 87 No. 4, 56-58 (July 26, 1928). Typical examples are given of what may be accomplished in the various departments of a paper mill. A. P.-C.

Electrical Plant in Paper Mills. Anon. World's Paper Trade Rev. 89, 1464-1479 (May 4, 1928). An illustrated description of some useful Crompton-Parkinson installations, such as paper machine drives, jordan drives, vertical centrifugal pump drives, reel and cutter drives, etc. A. P.-C.

Vibration as Related to Industrial Lighting. Allison J. Thompson. Paper Ind. 10, 834-835 (Aug. 1928). A brief discussion of the effects of vibration on industrial lighting, with a description of the Thompson shock absorber and a discussion of its merits. A. P.-C.

Pump Installations. Reginald Trauschold. Paper Trade J. 87, No. 10, 40-54 (Sept. 6, 1928). An illustrated description of approved pump installations, both old and new, to show examples of good practice and to focus the attention of pump manufacturers upon what the pulp and paper industry is seeking. A. P.-C.

Oil and the Paper Mill Engineer. Fred Grove-Palmer. Pulp & Paper 26, 986-987 (July 19,1928). A brief discussion of the importance of proper lubrication and the use of suitable lubricants in paper mills. A. P.-C.

Electrical Control in Paper Mills. R. T. Kintzing. Paper Mill 51, No. 39, 14, 41 (Sept. 29, 1928). Paper Trade J. 87, No. 14, 58-60 (Oct. 4, 1928). A brief discussion of the selection of suitable motors and starters for driving paper mill machinery. A. P.-C.

Fitting for Pipe Lines for Slush Pulp. Alison and Perrin Bros. Fr. pat 635,212. The fitting is designed for use on pipe lines through which slush pulp is fed intermittently to a number of pieces of apparatus. It consists essentially of a length of pipe which can be introduced into the line, the upper half of the cross section being semi-circular and the lower half rectangular. In the lower portion is an opening surrounded by a flange to which is attached a hopper which directs the pulp into the apparatus to be filled. A metal plate, which completely shuts the section of the pipe when in an inclined position and which completely shuts the opening when allowed to lie flat, is pivoted on a pin passing through the flanges at the sides of the opening. It is operated by means of a weighted lever which holds it in position. A. P.-C.

Welded Industrial Piping. Anon. Pulp & Paper 26 1331-1334 (Sept. 27, 1928). A discussion of its advantages. A. P.-C.

Paper Materials in the Paper Industry. T. H. Ireland. Paper Trade J. 87, No. 14, 63-66 (Oct. 4, 1928). A general discussion of the kind of piping and fittings best suited for paper mill use. A. P.-C.

The Sulzer High Pressure Primary Steam Engine. Anon. Paper Maker & Brit. Paper Trade J. International No. 45, 47 (1928). A description of an installation in a paper mill, where additional power was obtained by installing an 1100 h. p. cross compound primary steam engine, working with steam at an initial presure of 400 lbs. per. sq. in. and initial temperature of 660° F. and using the exhaust steam to drive a previously installed triple expansion 800 h. p. engine. A. P.-C.

The Terry Steam Turbine. V. L. Sanderson. Paper Mill 51, No. 38, 2, 35-36 (Sept. 22, 1928). A discussion of the application of the Terry steam turbine to paper machine drives, with a number of examples of successful installations. A. P.-C.

An Apparatus for Continuous Gas Analysis. Ernest C. White J. Am. Chem. Soc. 50, 2148-2154 (Aug. 1928). An apparatus is described which has been designed to afford a continuous determination of moderate concentrations of a given constituent in a flowing gas mixture and to register the concentration automatically by electrical means. The principle is to scrub a definite proportion of the gas with a definite proportion of a suitable absorbent and to determine the titer of the resulting solution by measuring its electrical conductivity. Two methods of calibrating the apparatus are given. Among the gases capable of estimation by this means are ammonia, hydrochloric acid, sulphur dioxide, chlorine, hydrogen sulphide and carbon dioxide. An actual adaptation for the determination of carbon monoxide in the presence of hydrogen is described in detail. Possibilities of extended use are indicated. A. P.-C.

Powell River Hog Fuel and Oil Burning Plant. P. Sandwell. Power 67, 849-852 (1928); Paper Trade J. 87, No. 6, 60-61 (Aug. 9, 1928). A description of the installation. Hog fuel is burned in Dutch ovens to supply 30% of the steam. The remainder is supplied by fuel oil, the burners being mounted on the rear wall of a common combustion chamber. A. P.-C.

Pulverized Fuel Firing for Steam Generation. Anon. Pulp & Paper 26, 1132 (Aug. 16, 1928). A brief description of the main features of the latest type of "Lopulco" equipment. A. P.-C.

Some of the "Whys" of Feed Water Treatment. Anon. Pulp & Paper 26, 1161-1162 (Aug. 23, 1928). A brief discussion of the causes of corrosion of boilers. A. P.-C.

Steam Plant in the Modern Paper Mill. A. D. Harrison. Pulp & Paper 26, 959 (July 12, 1928.) A discussion of economies to be realized by installation of modern high pressure steam plants in paper mills to replace existing ones, even though the latter are still in perfect condition, illustrated by an example in which possible economies are calculated. A. P.-C.

Modernizing the Mill and Power Plant. Trends in boiler installations. Reginald Trautschold. Paper Trade J. 86, No. 26, 34-40 (June 28, 1928). A brief discussion of present steam pressure practice, predominance of water tube boilers, steam regeneration, resuperheating steam and accumulator economies. A. P.-C.

Steam Generating Plant. Percy E. Rycraft. World's Paper Trade Rev. 89, 1378-1384 (Apr. 27,) 1482-1490 (May 4, 1928); Paper Maker and Brit. Paper Trade J. 85, 467-477 (May 1, 1928). A discussion of recent progress in steam raising plants. A. P.-C.

Ruths Steam Accumulator. Aono. Paper Making. 47, 175-178 (June 1928). A brief discussion of the general principle of steam accumulators and of the Ruths accumulator, with a description of the latter and a discussion of its advantages in pulp and paper mills. A. P. C.

New Power Plant of the Sorg Paper Co. Warren D. Spengler. Paper In. 10, 1005-1009 (Sept. 1928). An illustrated description of the recently completed central steam and electric power plant serving the Paul A. Sorg Paper Co. along with its affiliated companies, the W. B. Oglesby Paper Co. and the Frank Smith Paper Co. Middletown, O. A. P.-C.

Steam Turbine Installations. Reginald Trautschold. Paper Trade J. 87, 44-50 (Sept. 20, 1928). A few examples are given of some of the very latest steam turbine installations in paper mills. A. P.-C.

Trend in Development in Steam Turbine Practice. Henry Lewis Guy. Power (Aug. 7, 1928); Paper Trade J. 87, No. 10, 59-60 (Sept. 6, 1928). A brief discussion of present day tendencies. A. P.-C.

Extraction Turbine Installation at Tyrone. R. G. Heyl. Paper Trade J. 87, No. 2, 53-54 (July 12, 1928). A general survey of the installation of extraction turbines at the Tyrone, Pa. plant of the West Va. Pulp & Paper Co. bringing out the advantages of such an installation for the production of low cos power from high pressure steam when there is a large demand for low pressure steam. A. P.-C.

Miscellaneous

Corkboard Insulation for Machine Room Roofs in Paper Mills. A. C. Nielson Co. and H. D. Fisher. Paper Fill 51, No. 28, 4 (July -4, 1928). Paper Ind. 10, 1009 (Sept. 1928). A description of the cork insulated concrete roof constructed by the New Haven Pulp & Board Co. in 1925 over its paper machine room, replacing one which had rotted after a life of nine years owing to condensation. A. P.-C.

New 125 Inch Paper Machine. Anon, Paper Making 47, No. 7, i-iv (July 1928) World's Paper Trade Rev. 90, 282-286 (July 27, 1928). An illustrated description of the new machine of the Caldwell's Paper Mill Co. Ltd. at Inverkeithing. A. P. C.

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Financial Aspects of Industrial Pensions*

By Bryce M Stewart[1]

(Concluded from Last Week)

The question next arises, what may be the cost of a deferred annuity plan if charged currently? In order to arrive at some basis for estimating costs, we have made use of age distributions in several companies for which we have made surveys from time to time. To these age distributions we have applied some salary scales constructed by the late J. H. Woodward. We have assumed that the annuity granted each year is one per cent of the pay. The interest is calculated at the rate of 4 per cent per annum, and the fund required at 65 is assumed to be $9.15, the amount required at 4 per cent at age 65 under the ultimate rates of the American Annuitants Table. The salary scale first used ranged from $170 at age 18, to $370 from 20 to 25, to $1,000 at age of 60, and thereafter for each $1,000 of salary at 65.

Applying this salary scale to a recently established oil company located in the mid-continent region, we found that the maximum cost of pensions for one year's service was 2.97 per cent of payroll. From our procedure it is obvious this figure does not take into account either deaths or withdrawals prior to the retirement age. We found that in a second oil company, located on the Pacific Coast, established about 60 years ago, but which has had an unusually rapid expansion in the last few years, the cost, on the same basis, was 3.17 per cent of payroll. A third oil company, located in the middle West, now about 60 years old, but having had no expansion for many years, showed a cost of 3.61 per cent. A refinery located on the eastern seaboard indicated an annual cost of 3.62 per cent. Finally, a large eastern public utility showed a cost of 3.67 per cent.

It is probably not desirable to set up reserves in respect to any particular employee before he has served a certain probationary period, say two to five years, because of the large turnover in the early years of service, and the consequent multiplication of unnecessary bookkeeping. For the second company mentioned above, we have age classified by length of service. Taking out the first two years of service, we found that the cost would be reduced from 3.17 per cent of the payroll to 2.50 per cent of the payroll, and taking out the first three years, the annual cost was reduced to 2.11 per cent of payroll.

For any fairly large body of men, it is usually safe to set up reserves which discount the probability of death before retirement. Excluding the first two years of service in the second company, we discounted the remaining reserves for the probability of death and found that the cost was reduced from 2.50 to 1.62 per cent of payroll. The table which we used in discounting death was the 1920 census table which probably shows the lowest mortality for ages between 20 and 60 of any American table now in existence. Had the discounting been done on the basis of American Experience Mortality Table, the cost would have been still lower. For American industry we are inclined to believe that the proper mortality table lies somewhere between the two.

As to the salary scale used in the computation above, we doubt whether the early ages really ought to show as low salaries in relation to middle age as is indicated by the salary scale. We have no means of telling precisely how much effect a correct salary scale would have. A second salary scale also constructed by Mr. Woodward ranged from $570 instead of $370 at age 20, with $1,000 reached at 45 instead of 60. This scale was applied to the large eastern public utility and its use reduced the cost on the first basis from 3.67 per cent to 3.43 per cent of payroll.

The relatively small range of these costs for companies operating under widely different conditions in widely separated parts of the country from the Pacific Coast to the Eastern Seaboard with differences in age, and both the company and employees, is somewhat striking. While the group considered is much too small for any definite conclusion, we may state tentatively that the probabilities are that the annual cost of granting an annuity of one per cent of pay for each year of service, with the probationary period of three years, and discounting for the probability of death, will range from 1.5 per cent to 2 per cent of the payroll. The other factor in net cost—the withdrawals prior to the retirement age—is one which cannot be predicated with any certainty, for which reason we feel it outside our province to discuss it at this time. It is our intention, however, to make a study of certain companies over a period of years to determine what the effect of withdrawals has been in the past. It is chiefly because of the unpredictable nature of this factor that we have a plan which takes withdrawals into account only after they have occurred, but as soon after they have occurred as is practicable.

The existence of current costs and failure to charge current income for the purpose of setting aside a reserve or fund to cover expenses explains the existence of accrued liabilities which are sometimes staggering. It is obvious that these costs are incurred from the day the company, and not the plan, is started. It is also obvious that if current net costs, taking into account withdrawals, are 1.5 per cent of the payroll, the accrued liability will equal 100 per cent of the payroll (assuming it to be stable) in 34 years after the establishment of the company. If the force and payroll have been growing, of course this relatively large accrued liability will not be reached in so short a period of time, but the

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[1] Industrial Relations Counselors, Inc.

liability rapidly catches up with the payroll once it stops growing, and if the payroll should decline for a few years, the liability mounts proportionately even more rapidly. It is significant that only in the past few years, when payrolls in manufacturing industries have been declining, has there been any adequate recognition of the serious nature of the pension problem.

Accurate studies of cost are the greatest need in the field at this time. Such studies involve, first, investigations into the mortality of industrial pensions after retirement in order to determine the amount and funds required at the retirement age. Since it is not unlikely that differences in the nature of operations in the various industries have an effect on mortality, such investigations ought to be made by industrial classes or by groups of related industries. Moreover, there may be broad differences between the mortality experience of manual and office workers within the same industry.

Second, the examination of costs involves the factor of mortality to retirement. We feel that the experience of the insurance companies derived from their group insurance policies ought to provide a most accurate basis for such mortality rates.

Some studies of interest earned, by industrial companies, on funds and reserves, is needed.

Finally, research into the effect of withdrawals on costs would be helpful, not so much in discounting in advance the effect of withdrawals, as in giving companies a more accurate basis for determining what percentage of wages they can reasonably promise as pension in formulating or revising their plans.

Accrued Liability

It will be remembered that in order to defer consideration of the problem of accrued liability we have assumed a pension plan adopted by a newly established company. But pension plans are usually initiated well along in the company's history when the accrued liability problem must be faced.

Since pensions are given for service rendered by employees, and, more particularly, since the longer the service the greater the pension, it is apparent that a liability for future pensions accrues concurrently with service rendered. The liability is usually, of course, not legal except in so far as it applies to pensioners in those cases where a pension, once granted, is guaranteed. Accrued liability is the total of the liabilities for past service rendered to date by present active employees. If some employees have been pensioned, it includes the liability for annuities to these pensioners. The term has often been used to designate liabilities accrued prior to the starting of a plan or prior to the time a plan is put upon a sound financial basis and so has come to imply liabilities as yet unfunded. This implication is incorrect, since the liability is present, and is not extinguished by the putting aside of a reserve (a mere allocation of general balance sheet items to the amount of the liability) or by the accumulation of funds.

In the case of a company that has placed some employees on the pension roll, the task of calculating the accrued liability falls into two sections, (1) liability on account of pension already granted, (2) liability on account of the past service of active employees. If the number of pensioners is large enough to form an average, the liability on their account can be calculated with a fair degree of accuracy by the use of an appropriate table of mortality among annuitants. The amount of the pension is known exactly and the liability is the sum of the value of the individual annuities granted, whatever the type of plan. Of course adverse mortality or interest experience may prove the liability to be greater than anticipated. The company may continue to pay these pensions and so assume this risk or may confine the liability to the estimated proportions by purchasing annuities for the pensioners from an insurance company.

As against this degree of certainty in the case of the pensioners, it is necessary to rely upon estimate to a much greater extent in calculating the accrued liability for employees on the active roll. Assuming that the actual mortality and interest experience will conform to the tables used in the estimate, the fact remains that because of the uncertainty of the withdrawal factor the number of persons who will receive a pension at some time in the future is unknown in all cases. Moreover, in the great majority of plans the amount of the pension cannot be forecast with any degree of accuracy. Accordingly at any time the amount of the total pension liability on account of the service of employees to date can only be estimated. The method of computing the liability differs with the type of plan.

Final Salary Method

As has already been pointed out, under the final salary method of granting pensions not only is the number of persons who will be pensioned in the future unknown, but also all or part of the salaries or wages upon which their pensions will be based. By methods which have been outlined we assume that the "normal cost" has already been computed for each age at entry. The liability to any date is found by determining the total of the amounts which would now be accumulated, had the "normal cost" (a percentage of pay) been set aside since the beginning of service (or such time after that, say two or five years, as accumulations ordinarily start).

The calculations are facilitated by grouping salaries or wages into age and length of service groups and applying the same percentage (based on the "normal cost") to each. Salaries at ages prior to the date of the calculation are assumed to run proportionately to the salary scale.

Whole Salary

The estimate of liability under the whole salary plan depends, of course, on the method of financing used. Since, ordinarily, a flat percentage is used for each age at entry into service, the liability is the amount that would have accumulated had that percentage been set aside each year since entry or since the time when accumulations would ordinarily have started. Under this plan also the relation of past to present salaries is assumed to be that indicated by the salary scales.

Money Value

Since money value pensions give only the pension which accumulated funds will permit, the problem of accrued liability does not usually arise. In certain cases some liability may be assumed and its calculation would necessarily depend upon the particular case. In most of the teachers' funds on this basis, membership in the fund is limited to teachers entering the service after the establishment of the plan; the older teachers being cared for separately, usually by special grants from the legislative body.

Deferred Annuity Principle

In plans financed on the deferred annuity principle, the accrued lilability is the amount of the present value of the percentage to pay, to be granted as pension, times the total salary to date.

At first, both cost and accrued liability will be high, since no account is taken of the probability that few employees at present on the roll will ultimately be pensioned. After a period of years, however, the amount of the accumulations should gradually come to be a fairly accurate approximation of the liability.

There are several methods of taking care of the costs as they accrue. The simplest and commonest method is to charge current operating costs with the net cost for the year and credit the amount to a reserve set up as a liability on the balance sheet; interest accumulations should be credited, of course, to the same account. Second, the company might allocate to a special fund an amount of securities or treasury stock equal in value to the amount of the liability, the fund remaining as an asset on the balance sheet. Interest accumulations might be credited with a fixed percentage, and a surplus or deficit being credited to or made up from the company's general profit and loss account. Or the fund might be credited the actual interest or dividends earned. If the latter alternative were adopted, the rate of interest earned would be an additional unknown quantity and it might be deemed advisable to set up funds beyond those apparently required by the calculations, in order to provide a factor of safety.

The third method is in most respects similar to the second, except that both the liability and the fund are kept separate from the general books of the company under the administration of trustees. Instead of setting up a separate fund on its own books the company turns the monies or securities over to the board. The interest accumulations could be handled in either of the two ways above indicated.

We were curious to see how far the trusteeing of funds had gone. Our financial questionnaire was answered by 201 companies. Of these 201, 42 had made some beginning on establishing trust funds; 25 of these were non-contributory plans, and 17 were contributory.

The fourth method of making provision for annuities consists in the purchase of deferred annuities each year from an insurance company. The insurance company might, in calculating the premium, charge as premium the sum which at the specified rate of interest would amount to the sum required to pay the annuity at the age of retirement plus an estimated amount for administration and possibly add a factor of safety against the contingency of the annuitants livng longer than the table indicated. Under this method the company would receive credit for the amounts which it paid in with respect to persons withdrawing whether through discharge, resignation, or death. The full amount of the payments in respect of such persons probably would not be credited to the company as there would be some charge for the extra clerical expense.

A second premium might be quoted which took into account the factor of death before retirement age. In this case the premium would be lower. Credits to the company on account of separations would be handled as above.

Under a third plan insurance companies are willing occasionally to quote a flat figure per, say, 1,000 current employees, assuming all risks of both death and separation. In this method the premiums in all probability carry a heavy load for safety.

We made an effort to find what had been done in the direction of reinsurance plans. Twenty-nine of the 201 plants answering on this point had made some use of insurance company service. The types of service and the number of plans in each case were as follows:

Two companies purchase an annuity for the employee when he reaches retirement age.

Twenty-four companies purchase each year a deferred annuity representing the pension credit earned in that year.

Two companies have arranged for administration of their fund by an insurance company, securing, in this way, an investment service on a fund that remains the property of the company. When the insurance company receives notice of a retirement, it charges the fund with the amount required to purchase an annuity for the amount of the allowance indicated.

In one case the company purchases an endowment insurance policy maturing at the retirement age. If the employee dies before retirement his estate receives the face of the policy; if he lives to claim his pension, the policy matures and the proceeds are used to buy an annuity.

This is, of course, an inadequate discussion of the financial aspects of industrial pensions. Our financial returns on railroad retirement systems are now being received but we have not had opportunity to examine them or to refer to them here. Important considerations such as the taxation of pension funds have not been mentioned. My colleague, Mr. Murray Latimer, has collaborated in the preparation of this paper, and he and I hope to submit a more comprehensive treatment of the subject to our organization in the near future.

Discussion

Cooke Lewis: (Liberty Insurance Co.)—I am interested in the trend of thought as evidenced not so much by how many of the 200 in your survey are doing the thing, but how many of the 200 started this plan within the last two or three years. What is the more recent thing that is being established?

Is the trend towards pensions being paid for mutually by contributions between companies and employees, or is it not?

Dr. Stewart: The trend is toward pensions being paid for mutually, towards the contributory plan. We took the plans that were forwarded to us and grouped them by date of establishment. Before 1900, 50 per cent were contributory but that is a very small sample. As a matter of fact, there are only six plans in that group. Of those initiated in the period 1901 to 1905, 20.9 per cent were contributory, but only 24 plans of our sample were established in that period. The experience since 1900 by five-year periods is as follows:

1901-1905 a total of 24 plans, 20.9 per cent were contributory;
1906-1910 a total of 27 plans, 7.4 per cent were contributory;
1911-1915 out of a total of 96 plans, 10.4 per cent were contributory;
1916-1920 a total of 82 plans, 9.7 per cent were contributory;
1921-1925 a total of 56 plans, 23.6 per cent were contributory;
1926-1928 a total of 24 plans, 62.5 pere cent were contributory.

Mr. Lewis: Assuming that we were starting a pension plan in a company just now, I would be interested in knowing what is approximately the relationship between the salary which a man earns, assuming 20 year service and the pension he gets. For instance, one firm I have in mind pays 2 per cent for each year of salary on the 20 year basis; 40 per cent pension, based on the last 15 years of service.

C. R. Dooley: (Standard Oil Company of N. J.): Could the question be asked in this way: "How many 2 per cent of 1½ per cent plans are there?"

Mr. Lewis: I should like to know whether or not the 40 per cent is high or low; whether or not if you are figuring a plan it ought to be made 40, 30 per cent or something else.

Dr. Stewart: First let me say that if you or anybody else in this group will send in for our preliminary report which covers these points, we shall be glad to forward a copy. We have analyzed the plans by the various percentages used in the final computation of the allowance. A number of plans have 1 per cent, a number 2 per cent for the final five years or ten years. The most frequent plan, of course, is the 1 per cent over the final 10 years. In the railroad plans that is practically general.

Mr. Lewis: You say 1 per cent over the final 10 years. I don't quite understand.

Dr. Stewart: The allowance is 1 per cent of the average salary in the final ten years of service multiplied by the years of service. As to the service requirements a larger number of plans fall under the twenty year service requirement than under any other.

G. M. Willetts: (Armour and Company): I should say that 75 per cent of the total plans today of others than banks (banks pay 2 per cent for each year of service) of industrial plants, will be found to be based upon 1 per cent for each year of service. I think the statistics will show pretty close to that. There are very few industrial plants showing 2 per cent excepting those in the large contributory plans by employees. In the larger industries in the country you will find 1 per cent for each year, is the average plan.

Chairman Homer E. Niesz: (Commonwealth Edison Company): I think the 2 per cent per year, based on the average paid for the last ten years, is a high percentage. As a maximum, it is the highest of any that I know of, excepting perhaps a five-year average instead of a ten.

Elmer E. Tolsted: (Fonda Tolsted, Inc.): The experience that we have had with regard to the recent trend of pension plans is that years ago they started at 1 per cent; later on they were changed to 1¼ per cent then changed to 1½ per cent; and a few people were liberal enough to go to 2 per cent.

The average today, I would say, is about 1½ per cent. That change has been gradual. Recently I don't think the figure is going much higher. There will still be companies giving 2 per cent, which is the most liberal plan that should be considered, in our opinion. You shouldn't go below 1 per cent because it doesn't pay enough pension. 1½ per cent is a pretty good average.

Mr. Lewis: Is it the custom to give the same percentage to officials as to all salaried people, that is, to high and low salaries,

or is it the custom to draw a line and say above $5,000 salary the rule does not apply?

DR. STEWART: The maximum pension allowance is coming more and more in vogue. I have something here on that point. Out of 261 plans on which we made this count, there were 48 non-contributory plans that had no maximum allowance fixed; 13 contributory plans had no maximum allowance; there were 10 savings plans and 3 composite plans that had no maximum, making a total of 74 out of 261, or say 35 per cent that had no maximum pension allowance fixed in the plan.

I think the trend is in the other direction. With the better recognition of the costs of pension plans and the fact that many corporations are now faced with very considerable liabilities on account of high pensions to executives and are trying to find a way out, the maximum allowance seems in process of coming in.

MR. DOOLEY: These maximum allowances are in percentage or fixed amounts? If it is percentage, you are just as badly off as before.

DR. STEWART: The great majority of them are fixed amounts.

MR. WILLETS: The fixed amount, largely in banks, is on an average of $5,000; industrial pensions which have labor largely in their calculations, will limit that to $2,000 or $2,500, and treat the executives in the same way. $5,000 is the maximum allowance.

MR. LEWIS: You mean salary allowance?

MR. WILLETTS: $5,000 pension allowance. That is largely by banks and not industrial companies.

MR. DOOLEY: Between the two plans of calculations, the last five or ten years, or the entire period of service as applied to the man who has been with you 40 years, or the man who has been with you 10 years, which brings the most justice to the employee?

DR. STEWART: The salary does not change very much in the last ten years, so far as our observation has gone. Any salary scale mounts rapidly at the beginning, more slowly between 30 and 40, and then drops off, so that between 55 and 65 there is a comparatively level curve. In some individual cases, of course, you have a decline. So that, except in a few cases, I don't think it makes much difference if it is the last five or last ten years. On the question of justice as between old and new employees, if you have established a maximum hiring age your number of short service employees will be small.

MR. DOOLEY: I mean that it had seemed to some of us that figuring on the basis of the entire years of service, you would not be treating the old employee as fairly if you figured on the last few years of service, but would be treating a new employee more handsomely, whereas we want, if anything, to be more generous to the fellow with us 40 years by figuring it on the last few years. You really favor the older employee more than if we figured it on the entire basis.

DR. STEWART: As between old and new employees I think we may assume that if a pension is a reward for service rendered, the salary earned throughout the whole period of employment is the company's valuation of that service. The determinants of the allowance are the same for all employees—years of service, a specified percentage of the entire salary and the amount of the salary. Presumably the higher salary in the later ages is given for more valuable service rendered during those ages. Further the entire salary plan meets the requirement of security which from the employee's point of view, whether he be young or old, is the paramount consideration. If I were looking forward to a pension I would prefer an entire salary plan which permitted of my pension credit being set aside annually. I suppose that is because I am Scotch. I would know that if it could be set aside annually I'd be more sure of getting it. If they told me when I was 25 that I would get a pension based on my last ten years' salary, knowing the uncertainty as to what I would be earning at 65, I would be dubious of the company's ability to make proper provision. I would be wondering how in the world they could figure it out. I would prefer a sure thing, however small than a big promise which I didn't feel sure the company would fulfill.

I think that there is a fundamental consideration here. It is a question between a definite amount that can be set aside currently and a promise of something indefinite that cannot be provided for properly. In many cases the company will have to "reneg" on these indefinite promises when it grows older. The English railroads soon found that out in their experience with the final salary method.

MR. A. B. GATES (Commonwealth Edison Company): In the past five years, which has been the trend—toward the total salary method or the five or ten year average?

DR. STEWART: The total salary practice is comparatively small but there are several plans that have adopted the entire salary method in the last few years. The insurance companies have come into the field stronger than ever, in recent years; indeed pension activity on the part of insurance companies is a comparatively recent activity. Their presence in the field has brought forward the entire salary type of plan. For instance, Goodyear Tire and Rubber Company a short time ago, turned to the entire salary type of plan, and all the re-insured plans embody that principle.

We have here 17 entire salary plans and I think every one of those is an insured plan. They are plans on the contributory basis. We have in addition 12 entire salary plans, non-contributory schemes; also 4 composite plans, that is, partly contributory and partly non-contributory. This gives a total of 33 plans out of a total of 338, that have the entire salary basis. Most of these have come in during the last five years, and can be said to be largely coincident with insurance company activity in the pension field.

MR. DOOLEY: Would it be fair to state it this way: That the establishment of a pension plan on the final few years of service has been done with the idea of looking backward, taking care of the people who are employed years ago while the idea of basing it on the entire period of service has in mind the youngsters starting in today and looking forward?

DR. STEWART: Quite so. Plans have been put into operation in the first place very often because as the company says "We have these old men on our hands and we must do something. Their present salaries are so and so . . . . We'll make the allowance on that basis." That has been pretty largely the typical thing. Whether it has been the motive of disposing of certain employees from the business or humanitarian standpoint, it was only natural that they should vision the present salary. In the present period of reconstruction of pension schemes based on recognition of the current accrual of costs, the pension credit earned by each employee each year is determined and provided for on the basis of his earnings for the year. In short, interest has shifted from the problem of provision for a number of old employees to current provision for each employee from the time he is recognized as a member of the permanent force.

MR. WILLETS: Whether you take the yearly basis or the last five or ten years, so far as the safety of the plan or the assurance the man will receive, all depends on the financial responsibility of that company 20 years hence unless you insure. When you insure, you must take the yearly basis—that is the only way they will insure. If you are insuring, there isn't any reason to believe either plan will be safer than the other as to the payment 20 years hence.

QUESTION: What has been the influence of the insurance companies on this point?

DR. STEWARTS When you insure, of course, you have the entire salary basis. Some companies that have carried their own insurance in other fields will probably want to so continue in the pension field. The small company has no choice at all if the plan is to be safe, but to reinsure, and those plans will be entire salary plans. Those companies that are going to self-insure will look at insurance company practice and I thing it is inevitable that sooner or later they will adopt the entire salary basis. One

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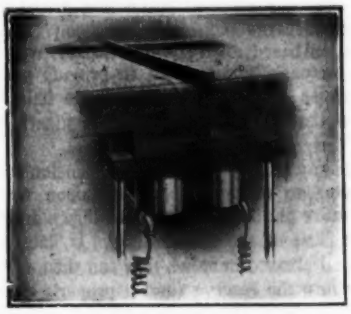

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thing, that will enforce it, is the question of costs. An appreciation of pension costs will bring action in two ways:

It will force sharing of the costs with employees—the plan will tend to become contributory and we have seen from the figures that the tendency is in that direction.

It will enforce current provision against the costs and this cannot be done accurately on any other basis than the entire salary plan.

It seems to me our industrial corporations are getting to the stage that some English corporations were in during the early 1900's. They had a railway experience in the early 1900's that is most instructive for us. The railroads had an accumulation of money in their pension funds. The rank and file and apparently the officials did not realize that this was only a provision against further pensions. They were deceived by the excess of current income over current expenditure, and they switched to the final salary basis and soon discovered their error. We cannot wait in America until our pensioners have multiplied several times before discovering ours. Some corporations are aware of the situation and are looking about for a way out. The very fact that they are turning to the contributory plan shows that the lesson is being learned.

Some are well aware that if they change to the entire salary basis the salary base for the computation of the allowance is lower. Some people who are switching over from a specified percentage on the final average salary, raise the question—"Can't we have the same percentage on the entire salary?" realizing right away that is a big saving.

D. N. Warters (Bankers Life Company): What in your opinion is the minimum pension, expressed in dollars, that you can pay an employee and still expect him to keep body and soul together?

Dr. Stewart: That is a large order. I think the amount of the pension depends on your philosophy of pensions. If you conceive of the pension as a continuation of an employee's wage or, as it is often stated, an amount sufficient to maintain his present standards, then you are going to have a high pension cost.

Mr. Wartens: What is your conception of a pension?

Dr. Stewart: My conception is that an industrial pension is pretty much a business proposition. It is a provision against liability, for public opinion will oblige the employer to give assistance to old employees who have no means of support. When an industrial concern is setting up a pension plan they are torn between two considerations: First, being magnanimous with pensioners; second, paying the dividends of shareholders.

Some corporations with pensions have got into difficulties with the shareholders on account of paying what the shareholders considered too generous pensions. When the directors see an increase in pension payments year after year they want to know if this process will never end. "Can't you devise a plan that will hold the expenditure right where it is?" They keep asking "What is it going to be next year?" And the personnel department would like to get some stabilization of the payments and get away from the fuss.

Industrial plans and State plans are two different things, of course. In the former economic considerations are paramount; in the other, there is more room for social considerations.

From the standpoint of the industrial plan I would say, we have a liability for a minimum standard of decency for the retired employee. I am afraid that the cost of pensions is so great that we cannot do very much more at least until we have made adequate provision against the liabilities already accrued. When we come to teachers' pensions, pensions for the Civil Service, pensions for employees in certain classes of public utilities, the administration is able to go to the taxpayers, as has been done in many of such plans that have been discovered insolvent.

In Italy back in the early 1900's they increased the freight rates in order to pay the deficits in the pensions on the government railroads. That is all right for a pension-paying establishment that has the taxpayer behind it. Taxes are a much surer source of income than the profits of an industrial concern. I think at the beginning, at least, we must have the philosophy of the minimum standard of comfort. Then if we find, after an experience of years and our knowledge of costs indicates that we can do something better, we can do it. Philosophy in a business has always to be subservient to financial considerations.

Mr. Warters: We have to set aside a reserve today in the dollars of today for pensions payable in dollars. But the pensions have to be paid in the future, when that dollar may only have one-half its present day value in purchasing actual needs. When we come to consider the pension based upon the entire salary against the pension based upon the final salary, we cannot set up today, reserves actuarially calculated to provide pensions on the final salary because a dollar may only have half the value 20 years from now that it now has, and consequently salary scales may be double their present amount in dollars.

It seems to me any company setting up a pension plan where the company is trying to make it something upon which they can depend in the future and know just where they stand, will have to set it up on the basis of the entire salary. If, later on, they find that dollars have decreased in value, they can then, *if their finances will permit* pay into the reserve fund a properly calculated additional amount to increase the amount of each pension in dollars. I realize that the worker holds the sack, where salary scales change, if you base the plan on the entire salary, but at least the plan is sound. You are not going to have to turn around 20 years from now and tell the worker, "We haven't got the money to pay these pensions because we set aside each year an amount in dollars based on a salary scale of that year and this fund isn't anywhere near salaries as salary scales are now on a different basis."

INCREASES BOILER EFFICIENCY

(Continued from page 50)

ciency 20 per cent should at the figures quoted for installation be covered by the savings realized in little over the twelve months.

The results attained to date in burning crushed coal in suspension and the high promise such combustion method appears to offer in the betterment of power plant practice and economy in steam generation would certainly seem to justify careful investigation, at least on the part of any paper mill contemplating the modernization of its power plant, and particularly of any mill at present burdened with relatively high steam and power costs. The new combustion system may not always prove as efficient and economical as it appears to have done in the two prominent installations consummated to date in paper mill plants, but its present record should at least command the consideration of pulp and paper mills, just as should the possible installation of pulverized coal burning systems and dependence upon modern stoker equipment.

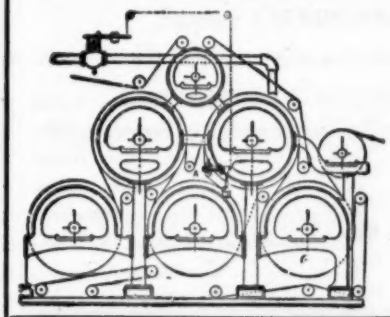
Starts Automobile Truck Service

Holyoke, Mass., July 9, 1929.—The Boston & Maine Railroad has inaugurated an automobile truck service for shippers in this section in less than carload lots that will be of especial value to papeterie and other paper converters. A fleet of six seven-ton trucks has been secured which will take the place of the "ferry" freight cars, and bring the small shipments to the freight station in time to make the fast and express freights the same day, saving 24 hours in time in many cases to points from Holyoke. The Sheldon Transfer Company will have oversight of this truck work.

Allen M. Chalmers Dead

Holyoke, Mass., July 9, 1929.—Allen M. Chalmers, manager of the fancy paper department of the Hampden Glazed Paper and Card Company of this city died Thursday at his home after a year's ill health. He came from Chicago to Holyoke in 1917. The funeral was held Saturday afternoon with burial in Forestdale cemetery.

The Pickles Drying Regulator



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Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JULY 6, 1929

SUMMARY

Wall paper	98 bls., 18 cs.
Paper hangings	39 bls., 31 cs.
News print	3384 rolls
Printing paper	38 rolls, 99 cs.
Wrapping paper	15 bls., 74 cs.
Packing paper	37 cs.
Tissue paper	111 cs.
Transparent grease proof paper	20 cs.
Stencil paper and ink	66 cs.
Decalcomania paper	75 cs.
Colored paper	54 cs.
Baryta coated paper	153 cs.
Surface coated paper	166 cs.
Photo paper	10 cs.
Filter paper	8 cs.
Drawing paper	28 cs.
Writing paper	54 cs.
Envelopes	1 cs.
Silk paper	5 cs.
Pith paper	1 cs.
Bowl paper	8 bls.
Parchment paper	6 bls.
Straw board	550 rolls
Card board	242 cs.
Miscellaneous paper	1255 rolls, 2 pkgs., 98 bls., 339 cs.

WALL PAPER

J. E. Bernard & Co., Milwaukee, Hamburg, 2 cs.
Guaranty Trust Co., Milwaukee, Hamburg, 7 cs.
Globe Shipping Co., Deutschland, Hamburg, 8 bls.
F. J. Emmerich, Deutschland, Hamburg, 7 bls.
W. H. S. Lloyd & Co., American Banker, London, 2 bls.
Praser Co., Inc., Arabic, Antwerp, 81 bls.
R. F. Downing & Co., Homeric, Southampton, 5 cs.
Stone Gross Co., Aquitania, Southampton, 1 cs.
Thomas & Pierson, Aquitania, Southampton, 1 cs.
R. F. Downing & Co., Aquitania, Southampton, 2 cs.

PAPER HANGINGS

A. C. Dodman, Jr., Inc., Laconia, Liverpool, 16 bls.
W. H. S. Lloyd & Co., Minnewaska, London, 15 bls., 14 cs.
W. H. S. Lloyd & Co., Albertic, Liverpool, 8 bls.
Whiting & Patterson Co., Inc., Homeric, Southampton, 5 cs.
Whiting & Patterson Co., Inc., Aquitania, Southampton, 12 cs.

NEWS PRINT

Bank of Montreal, Nord, Corner Brook, 3,305 rolls.
Stora Kopperberg Corp., Kungsholm, Gothenburg, 79 rolls.

PRINTING PAPER

E. Dietzgen & Co., Veendam, Rotterdam, 52 cs.
Martin & Bechtold, Muenchen, Bremen, 13 cs.
Dingelstedt & Co., Muenchen, Bremen, 23 cs.
Keuffel & Esser Co., Milwaukee, Hamburg, 11 cs., 38 rolls.

WRAPPING PAPER

C. Steiner, Veendam, Rotterdam, 15 bls.
F. C. Strype, Arabic, Antwerp, 3 cs.
Birn & Wachenheim, Arabic, Antwerp, 71 cs.

PACKING PAPER

American Express Co., Deutschland, Hamburg, 23 cs.
Gevaert Co. of America, Arabic, Antwerp, 14 cs.

TISSUE PAPER

F. C. Strype, City of Fairbury, Helsingfors, 29 cs.
F. C. Strype, Laconia, Liverpool, 2 cs.
Meadows, Wye & Co., Laconia, Liverpool, 5 cs.
F. B. Vandegrift & Co., Laconia, Liverpool, 6 cs.
B. F. Drakenfeld & Co., Laconia, Liverpool, 1 cs.
Old Master Paper & Pulp Co., Milwaukee, Hamburg, 66 cs.
W. J. Byrnes & Co., Homeric, Southampton, 2 cs.

TRANSPARENT GREASEPROOF PAPER

Central Union Trust Co., Deutschland, Hamburg, 20 cs.

STENCIL PAPER AND INK

Arlac Dry Stencil Co., Deutschland, Hamburg, 66 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Laconia, Liverpool, 57 cs.
C. W. Sellers, Muenchen, Bremen, 4 cs.
L. A. Consmiller, Muenchen, Bremen, 4 cs.
C. W. Sellers, Milwaukee, Hamburg, 10 cs.

COLORED PAPER

S. Gilbert, Muenchen, Bremen, 27 cs.
F. L. Kramer, Muenchen, Bremen, 2 cs.
W. Bersch, Deutschland, Hamburg, 12 cs.
J. Wanamaker, Republic, Bremen, 13 cs.

BARYTA COATED PAPER

Globe Shipping Co., Muenchen, Bremen, 153 cs.

SURFACE COATED PAPER

Phoenix Shipping Co., Milwaukee, Hamburg, 3 cs.
Phoenix Shipping Co., Deutschland, Hamburg, 21 cs.
P. Puttman, Arabic, Antwerp, 47 cs.
Gevaert Co. of America, Arabic, Antwerp, 95 cs.

PHOTO PAPER

J. H. Schroeder Banking Corp., Muenchen, Bremen, 7 cs.
J. J. Gavin, Aquitania, Southampton, 3 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Carmania, London, 8 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Carmania, London, 2 cs.
Keuffel & Esser Co., Milwaukee, Hamburg, 26 cs.

WRITING PAPER

Globe Shipping Co., De Grasse, Havre, 1 cs.
Taub, Hummel & Schnall, De Grasse, Havre, 4 cs.
B. Altman & Co., De Grasse, Havre, 5 cs.
B. Altman & Co., Homeric, Southampton, 26 cs.
Stern Bros., Ile de France, Havre, 11 cs.
G. W. Sheldon & Co., Aquitania, Southampton, 5 cs.
Taub, Hummel & Schnall, Aquitania, Southampton, 2 cs.

ENVELOPES

H. Reeve Angel & Co., Inc., Carmania, London, 1 cs.

SILK PAPER

J. Beckhard & Co., Veendam, Rotterdam, 5 cs.

PITH PAPER

Nosawa & Co., Argun Maru, Keelung, 1 cs.

BOWL PAPER

Hurley Johnson Co., Laconia, Liverpool, 8 bls.

PARCHMENT PAPER

Walker Goulard Plehn Co., Milwaukee, Hamburg, 6 bls.

STRAW BOARD

Perkins Goodwin & Co., Veendam, Rotterdam, 214 rolls.
C. H. Powell & Co., Veendam, Rotterdam, 200 rolls.
A. Vuyk, Veendam, Rotterdam, 136 rolls.

CARD BOARD

American Express Co., Deutschland, Hamburg, 242 cs.

MISCELLANEOUS PAPER

E. Dietzgen & Co., Veendam, Rotterdam, 26 cs.
Union Paper & Twine Co., City of Fairbury, Gothenburg, 98 bls.
Gilbert Paper Co., City of Fairbury, Gothenburg, 125 rolls.
Crene Kraft Co., City of Fairbury, Gotherburg, 53 rolls.
The Borregaard Co., Inc., City of Fairbury, Gothenburg, 867 rolls.
Standard Products Corp., France, Havre, 62 cs.
C. K. MacAlpine & Co., Kungsholm, Gothenburg, 210 rolls.
E. H. Sargent & Co., Kungsholm, Gothenburg, 9 cs.
American Express Co., Deutschland, Hamburg, 13 cs.
A. C. Dodman, Jr., Inc., De Grasse, Havre, 2 pkgs.
P. J. Schweitzer, De Grasse, Havre, 17 cs.
Hensel, Bruckman & Lorbacher, Columbus, Bremen, 9 cs.
Eleto Co., Ile da France, Havre, 1 cs.
Standard Products Corp., Ile de France, Havre, 170 cs.
Guibout Freres, Ile de France, 6 cs.
W. J. Byrnes & Co., Ile de France, Havre, 13 cs.
Keller Dorian Paper Co., Ile de France, Havre, 13 cs.

RAGS, BAGGINGS, ETC

Irving Trust Co., Veendam, Rotterdam, 13 bls. rags.
Salomon Bros. & Co., Veendam, Rotterdam, 52 bls. rags.
Katzenstein & Keene, Inc., Veendam, Rotterdam, 217 bls. rags; 316 bls. bagging; 36 bls. cottons; 29 bls. fustians.
Castle & Overton, Inc., Laconia, Liverpool, 46 bls. rags.
Equitable Trust Co., Laconia, Liverpool, 11 bls. rags.
Amsinck Sonne & Co., Inc., Muenchen, Bremen, 42 bls. rags.
Bank of The Manhattan Co., Muenchen, Bremen, 100 bls. rags.
A. W. Fenton, Inc., Muenchen, Bremen, 52 bls. rags.
Equitable Trust Co., Duetschland, Hamburg, 154 bls. rags.
Castle & Overton, Inc., Cameronia, Glasgow, 12 bls. paper stock.
Brown Bros. & Co., Cameronia, Glasgow, 94 bls. rags.
Baring Bros. & Co., Cameronia, Glasgow, 5 bls. rags.
Anglo South American Trust Co., Cameronia, Glasgow, 105 bls. rags.
Star Woolen Co., West Eldara, Antwerp, 12 bls rags.
American Express Co., West Eldara, Antwerp, 40 bls. rags.
Salomon Bros. & Co., West Eldara, Antwerp, 112 bls. flax waste.
Castle & Overton, Inc., West Eldara Antwerp, 191 bls. rags.
W. Lowenthal & Co., West Eldara, Antwerp, 22 bls. rags.
E. Butterworth & Co., Inc., West Eldara, Antwerp, 145 bls. flax waste.
W. Schall & Co., Minnewaska, London, 119 bls. paper stock.
Brown Bros. & Co., Minnewaska, London, 76 bls. rags.
National City Bank, Saco, Rotterdam, 192 bls. bagging.
Equitable Trust Co., Fred. VIII, Copenhagen, 186 bls. rags.
Castle & Overton, Fred. VIII, Copenhagen, 45 bls. bagging; 70 bls. rags.
A. W. Fenton, Inc., Republic, Bremen, 50 bls. rags.
E. Mayer, Republic, Bremen, 14 bls. rags.
Guaranty Trust Co., Clara, Venice, 114 bls. rags.
Guaranty Trust Co., Clara, Bari, 228 bls. rags; 61 bls. bagging.
J. M. Hagy Waste Co., Argun Maru, Kobe, 23 bls. rags.
National Waste Co., Argun Maru, Kobe, 48 bls. rags.
Darmstadt Scott & Courtney, Argun Maru, Kobe, 50 bls. rags.
Castle & Overton, Inc., Exmoor, Barcelona, 81 bls. bagging.
R. F. Downing & Co., Meltonian, Manchester, 51 bls. new cuttings.
Equitable Trust Co., Meltonian, Manchester, 33 bls. twine; 15 bls. thread waste.
Castle & Overton, Inc., Ocean Prince, Dundee, 32 bls. threads; 15 bls. rags; 138 bls. waste.
Brown Bros. & Co., Ocean Prince, Dundee, 805 bls. paper stock.
Whaling Waste Products Co., Ocean Prince, 51 bls. paper stock.
E. J. Keller Co., Inc., Ocean Prince, ——, 17 bls. threads.
Castle & Overton, Inc., Cabo Ortegal, Spain, 159 bls. rags.
E. J. Keller Co., Inc., Volendam, ——, 42 bls. rags.
E. J. Keller Co., Inc., California, ——, 33 bls. rags.
E. J. Keller Co., Inc., Hellen, ——, 145 bls. rags.
E. J. Keller Co., Inc., Keifuku Maru, ——, 81 bls. rags.

OLD ROPE

Brown Bros. & Co., Minnewaska, London, 198 coils.
W. Schall & Co., Saco, Rotterdam, 38 coils.
Irving Trust Co., Saco, Rotterdam, 153 coils.

CASEIN

Kalbfleisch Corp., Pan America, B. Ayres, 84 bags.

WOOD PULP BOARDS

Wilkinson Bros. & Co., Inc., Kungsholm, Gothenburg, 20 rolls.
C. K. MacAlpine & Co., Kungsholm, Gothenburg, 5 bls.

WOOD PULP

Perkins, Goodwin & Co., City of Fairbury, Obbola, 350 bls. sulphate, 50 tons.
——, City of Fairbury, Rauma, 475 bls. sulphite, 78 tons.
Price & Pierce, Ltd., Kungsholm, Gothenburg, 1,250 bls. wood pulp.
Castle & Overton, Inc., Milwaukee, Hamburg, 1,596 bls. wood pulp, 238 tons.
——, Deutschland, Hamburg, 375 bls. wood pulp, 76 tons.
Atterbury Bros., Inc., Stavangerfjord, Oslo, 500 bls. wood pulp.
M. Gottesman & Co., Inc., Clara, Sebenice, 4,000 bls. wood pulp.
Pagel Horton & Co., Inc., Schenectady, Husum, 60 bls. sulphate, 100 tons.
E. J. Keller Co., Inc., Tijuca, ——, 336 bls. wood pulp.

(Continued on page 74)

Cotton and Paper Rolls
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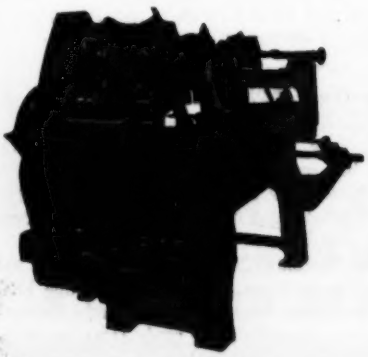

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Get My Quotations Before Placing Your Orders
Special Machinery Designed and Built

A. L. PARRISH
1702 Robinson St., South Bend, Ind.

Imports of Paper and Paper Stock

(Continued from page 72)

E. J. Keller Co., Inc., Keifuku Maru, ——, 351 bls. wood pulp.

WOOD FLOUR

B. L. Soberski, Veendam, Rotterdam, 2,000 bls.
State Chemical Co., Veendam, Rotterdam, 420 bags.
State Chemical Co., Saco, Rotterdam, 541 bags, 34,920 kilos.
Bakelite Corp., Saco, Rotterdam, 932 bags, 63,520 kilos.
B. L. Soberski, Stavangerfjord, Frederickstad, 750 bags.

PHILADELPHIA IMPORTS

WEEK ENDING JULY 6, 1929

J. Andersen & Co., City of Fairbury, Gothenbury, 500 bls. sulphite, 101 tons.
Union Paper & Twine Co., City of Fairbury, Gothenburg, 54 rolls paper.
Wilder Bros., City of Fairbury, Gothenburg, 20 rolls paper.
Castle & Overton, Inc., West Eldara, Antwerp, 148 bls. rags.
Philadelphia National Bank, West Eldara, Antwerp, 387 bls. rags.
F. Weber & Co., West Eldara, Antwerp, 13 cs. drawing paper.
Perkins Goodwin & Co., West Eldara, Antwerp, 115 cs. paper.
J. E. Bernard & Co., West Eldara, Antwerp, 5 cs. paper.
Corn Exchange Bank, West Eldara, Antwerp, 45 bls. rags.
Philadelphia National Bank, West Eldara, Antwerp, 25 bls. rags.
D. I. Murphy, West Eldara, Antwerp, 115 bls. rags; 48 bls. old rope.
National City Bank, Explorer, Piraeus, 275 bls. rags; 45 bls. bagging.
Bank of New York, Exmoor, Barcelona, 147 bls. rags.
Perkins Goodwin & Co., Schenectady, Ornskoldsvik, 609 bls. wood pulp, 101 tons.
Perkins Goodwin & Co., Schenectady, Obbola, 3,500 bls. sulphate, 500 tons.
Pagel Horton & Co., Inc., Schenectady, Minksund, 6,750 bls. sulphate, 1,125 tons.
Pagel Horton & Co., Inc., Schenectady, Hornefors, 600 bls. sulphite, 100 tons.
Anglo South American Trust Co., Meltonian, Liverpool, 101 bls. bagging.
Castle & Overton, Inc., Cabo Espartel, Valencia, 366 bls. rags.
Castle & Overton, Inc., Ammon, Germany, 46 bls. rags.
Castle & Overton, Inc., Exeter City, England, 253 bls. rags.
Castle & Overton, Inc., Ocean City, Scotland, 68 bls. waste; 5 bls. rags.
Castle & Overton, Inc., Westerdyk, Holland, 29 bls. rags; 680 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING JULY 6, 1929

Pagel Horton & Co., Inc., Schenectady, Hornefors, 6,000 bls. sulphite, 1,000 tons.
Pagel Horton & Co., Schenectady, Ornskoldsvik, 7,500 bls. sulphate, 1,250 tons; 150 bls. sulphite, 25 tons.
Perkins Goodwin & Co., Schenectady, Ornskoldsvik, 2,439 bls. wood pulp, 405 tons.
Perkins Goodwin & Co., Schenectady, Obbola, 1,925 bls. sulphate, 275 tons.
M. Gottesman & Co., Inc., Schenectady, Helsingfors, 1,228 bls. wood pulp, 203 tons.
Castle & Overton, Inc., Hagen, Germany, 4,074 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING JULY 6, 1929

Johanson Wales & Sparre, Inc., Korsholm, Gothenburg, 180 bls. dry soda pulp.
Parsons & Whittemore, Inc., Korsholm, Gothenburg, 54 bls. sulphite; 750 bls. sulphate.
Scandinavian Pulp Agency, Inc., Korsholm, Gothenburg, 2,667 bls. sulphite; 5,080 bls. kraft pulp.
Perkins Goodwin & Co., Korsholm, Gothenburg, 254 bls. sulphite.
Price & Pierce, Ltd., Korsholm, Gothenburg, 500 bls. wood pulp.
S. Godfrey, West Eldara, Antwerp, 18 bls. rags.
Blane & Vaas Co., West Eldara, Antwerp, 8 bls. rags.
Merchants National Bank, West Eldara, Antwerp, 19 bls. rags.
Draper & Co., West Eldara, Antwerp, 28 bls. rags.
Cordingley & Co., West Eldara, Antwerp, 5 bls. rags.
J. T. Lodge & Co., West Eldara, Antwerp, 9 bls. rags.
National Shawmut Bank, West Eldara, Antwerp, 46 bls. rags.
E. Butterworth & Co., Inc., West Eldara, Antwerp, 304 bls. flax waste.
1st National Bank of Boston, West Eldara, Antwerp, 11 bls. rags.
State St. Trust Co., West Eldara, Antwerp, 95 bls. flax waste.
American Express Co., West Eldara, Antwerp, 272 rolls paper.
Baring Bros. & Co., West Eldara, Antwerp, 52 bls. rags.
Atlantic National Bank, West Eldara, Antwerp, 22 bls. rags.
T. D. Downing & Co., Meltonian, Manchester, 64 bls. new cuttings.
Baring Bros. & Co., Meltonian, Manchester, 342 bags hide cuttings; 169 bls. new cuttings; 89 bls. pickers; 168 bls. rags.
Brown Bros. & Co., Meltonian, Manchester, 56 bls. waste paper.
International Purchasing Co., Meltonian, Manchester, 86 bls. old rope.
Brown Bros. & Co., Meltonian, Manchester, 202 bls. old rope.
Castle & Overton, Inc., Westerdyk, Holland, 2,580 bls. wood pulp.
Castle & Overton, Inc., J. Skinner, Germany, 44 bls. rags.
Castle & Overton, Inc., Wytheville, Holland, 79 bls. rags.
Castle & Overton, Inc., Mexico, Germany, 1,609 bls. wood pulp.
Castle & Overton, Inc., ——, Germany, 701 bls. wood pulp.

John J. Boyle's Long Service

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 1, 1929.—Sixty-seven years of faithful service with one concern, and 60 years as salesman, is the record of John Joseph Boyle, of Storrs & Bement Company, 282 Congress street. Mr. Boyle is still active, says he feels as young as he did 40 years ago, and that he has many more years in which to call on the boys. He is 81 years young this week, and was a Fourth of July baby in 1848.

Mr. Boyle is well known in the trade all over New England, and has sold news print to the newspapers, enamel coated papers to the magazine publishers and fine book papers to some of the old-line publishing houses. He has handled well known lines, such as Old Hampshire Bond and Hammermill Bond, selling many carloads. Besides his friends in publishing houses, Mr. Boyle knows about all the box makers in New England, having sold them paper for use in manufacturing their product. For many years he covered 50 miles a day, 300 days in the year and estimates that he has travelled approximately 1,000,000 miles.

His customers included buyers in Lowell, Lawrence, Haverhill, Newburyport, Lynn, Beverly, Salem, Gloucester, Fall River and Taunton in Massachusetts; Laconia, Tilton and Nashua in New Hampshire, besides many others. At present he calls on his Boston friends, to whom he sells paper . He is in town every day, coming from Dorchester, where he makes his home at 64 Hartford street, with his son, John J. Boyle, Jr., who is a Boston broker.

Born in Boston, he attended school in this city, until he had completed the fifth grade at the age of thirteen. He then tried to enlist in the Union Army, but was turned down because he was too small. Amariah Storrs, of A. Storrs & Bement, as the firm was then called, gave him a job as errand boy in a little paper store in Cornhill. From there he went with the firm in their successive locations on Devonshire street, Bromfield street, Franklin street, Federal street and now at Congress street, where there is a large modern establishment. Promoted step by step, he was given an opportunity in 1869 to see what he could do as a salesman. Today he is calling on some of the accounts he secured 60 years ago.

"There have been many changes in the selling game since then," he says. "I travelled then by horse and railroad. Our line was good, but of course nowhere near as good as today. Competition wasn't so great and customers weren't so particular. They wouldn't buy more than a week's supply at a time. Today you have to hustle. The same qualities make for successful salesmanship now as then. I am proud to say that in all my sixty years as a salesman, I've never lied to a customer, neither have I ever been late to keep an appointment. Because of this I never had a row with any of my customers."

Mr. Boyle left Saturday, June 29, for a two months' vacation in New Hampshire. He will go to Greenfield and Peterboro, and visit his son, who has a summer camp in Antrim.

To Review Straw Board Code

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 10, 1929—Frank Dow, Acting Commissioner of Customs has sent a communication to the Assistant Attorney General at New York approving his course in asking for a review of a decision of the United States Customs Court in connection with straw board.

The decision of the Customs Court held that certain straw board classified as dutiable at 30 per cent under paragraph 1309 of the tariff act of 1922 was dutiable at 10 per cent under paragraph 1302 of the same act. An appeal is being made from the decision to the United States Customs and Patent Appeals.

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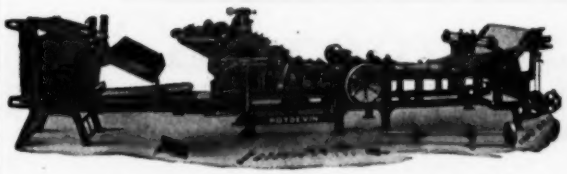

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, July 10, 1929.

While trading in the local paper market was only moderately active during the past week, mainly due to the holidays and various other seasonal causes, a cheerful sentiment prevails throughout the industry. Inquiries for future business are coming along in satisfactory volume and sales forces of the leading paper organizations are planning a strenuous autumn campaign. Prices of the various standard grades are holding to schedule, in most instances.

News print production has fallen off in the United States and Canada and the present demand is mostly seasonal. Operations, as reported by the News Print Service Bureau, were 78 per cent of total capacity during the week ended June 29. Shipments were fairly satisfactory. Stocks in hand at the news print mills are not excessive and the market is in a better position than for some time past.

Most of the business transacted in the paper board market was along routine lines. Prices continue irregular. Despite the holidays, the fine paper market rules steady to firm, with prices holding to previously quoted levels. Coated book business is excellent at present. No radical changes were recorded in the coarse paper market. Wrapping paper continues to go forward in heavy volume.

Mechanical Pulp

The ground wood market is exhibiting a strong undertone. Shipments of both domestic and imported mechanical pulp are going forward at a good pace. Production has been curtailed somewhat and accumulations are not excessive. Inquiries for future business are fairly numerous, according to reports. Prices are generally holding to previously quoted levels and shading is infrequent.

Chemical Pulp

Strong unbleached sulphite is the bright particular feature of the chemical pulp market. Producers of this grade are well sold ahead on contract and prices are very firm. Domestic easy bleaching sulphite is also displaying strength. Both domestic and imported bleached sulphite are steady, with prices unaltered. Kraft pulp is slightly easier.

Old Rope and Bagging

Conditions in the old rope market are highly satisfactory. Demand for both domestic and foreign manila rope is persistent and the recently advanced prices are being maintained without difficulty. Mixed strings are in fair request. The bagging market is rather quiet. Roofing stock is not arousing much interest. Gunny scrap is miderately active.

Rags

The domestic rag market is practically unchanged. Due to the holidays, and the inventory period, demand from the paper mills is rather quiet at present. Cotton cuttings are arousing some interest. Roofing stock, however, is dull. No radical changes have been recorded in the foreign rag market and dealers abroad are still asking high prices for the various grades.

Waste Paper

Although the paper stock market was rather quiet during the past week, conditions are fairly satisfactory for the season. Offerings of No. 1 soft white shavings are decidedly limited and prices have advanced, the prevailing quotation being from 2.55 to 2.65. The lower grades of paper stock are in light request. Strictly folded news is now being offered at from .55 to .60, while No. 1 mixed paper is selling at from .40 to .45.

Twine

The twine market is in a sound position for the season. Supplies are moving into consumption in normal volume for the time of year. While demand is light at present, there are a fair number of inquiries around on account of future business. Prices generally rule steady and unchanged and there is little talk of concessions around.

News of the Boston Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 8, 1929.—John Carter & Co., Inc., are distributing the new sample books of Roloc Cover and Interwoven Cover, manufactured by the Associate Mills, Springfield, Mass. Several lines of these covers in new colors are on the market.

Arthur E. Ham, president of Arthur E. Ham & Sons, is at Duxbury, Mass., for about a week.

E. D. Wallin, credit manager for the Arnold-Roberts Company, is passing his vacation at Lake Boone, Sudbury, Mass.

William T. Massey, president of Massey & Wendell, Inc., is spending his vacation at Manomet, Mass., accompanied by his family.

Charles A. Esty, managing director of Carter Rice & Co. Corp., is at Orr's Island, Casco Bay, Me., with his family for the summer.

John F. Wilson, advertising manager for Carter Rice & Co. Corp., leaves July 14 for Newfound Lake, in the White Mountains, where he will pass his vacation with his family.

Thomas Marshall Dix, vice-president of the Spaulding & Tewksbury Company, was present at a luncheon of the Massachusetts Bay Centenary Conference at the Hotel Somerset, after which plans for synchronized celebrations throughout the State in 1930 were adopted. Mr. Dix is a member from Everett. He is passing a month's vacation in Sandwich, N. H., accompanied by Mrs. Dix and daughter.

J. H. Brewer, general manager of the Storrs & Bement Company, is on a two weeks' vacation at Camp Devens.

E. W. Howell, formerly vice-president of the Continental Paper Company, Bogota, N. J., has associated himself with the Federal Paper Board Company, Inc., of the same place.

F. M. Enwright, of the Lynn Telegram, Lynn, Mass., is to establish a penny daily paper in Boston. The first issue is to appear early in the fall.

B. F. Perkins & Son Expand

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 9, 1929.—B. F. Perkins & Son, Inc., are busy converting about 3,600 square feet of storage in their Willimansett plant into manufacturing space in order to increase production. Improvement in the demand for paper making machinery and textile machinery has led to this move. The concern manufactures a line of devices for testing the strength of paper among other things, and also micrometer dial gauges for measuring the thickness of paper and cardboard, rag and stock cutters and other machinery. Archibald C. Lade is general manager. J. H. Hamilton is superintendent, and J. C. Cunningham paper specialist.

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Classified List of Pulp Mill Products
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Envelope Manufacturers
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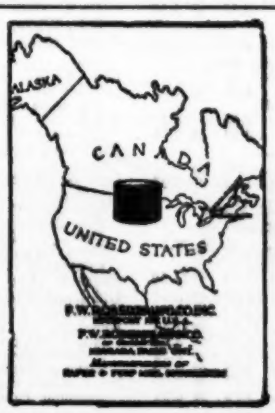

BURRS

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, July 10, 1929.

BLANC FIXE.—Conditions in the blanc fixe market are practically unchanged. Prices are generally holding to previously quoted levels. The pulp is selling at from $42.50 to $45.00 per ton, in bulk, while the powder is quoted at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market was rather quiet. Contract shipments were around normal for the time of year. Prices are holding to schedule and there is little talk of concessions around. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—The casein market continues unchanged. Domestic casein is quoted at from 15¼ cents to 15½ cents per pound, while Argentine standard ground is selling at from 15¼ cents to 15½ cents per pound, and finely ground at from 15¾ to 16 cents per pound, all in bags, car lot qauntities.

CAUSTIC SODA.—No radical changes were recorded in the caustic soda market. The contract movement is well up to average for the season. Solid caustic soda is still quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Most of the business transacted in the china clay market during the past week was along routine lines. Prices remain unchanged. Imported china clay is quoted from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $15 per ton, at mine.

CHLORINE.—Steadiness prevails in the chlorine market. Supplies are moving into consumption in satisfactory volume. Prices remain unchanged. Chlorine is quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on standard contracts. The spot quotation ranges from 3¼ cents to 3½ cents per pound.

ROSIN.—The rosin market was fairly active. Prices were slightly firmer. The grades of gum rosin used in the paper mills are now quoted at from $8.35 to $8.45 per 280 pounds, in barrels, ex dock. Wood rosin is selling at from $6.50 to $7.30 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Offerings of salt cake are limited and the market is in a sound position. Shipments against contract are being maintained at a good pace. Prices are steady. Salt cake is quoted at from $16 to $18 per ton while chrome salt cake is selling from $14 to $15 per ton in bulk, at works.

SODA ASH.—The soda ash market is exhibiting a strong undertone. Supplies are going forward to the paper mills in excellen volume for the season. Prices are holding to schedule without difficulty. Contract quotations on soda ash, in car lots, at works, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—Trading in the starch market was moderately active. Demand for this product is fairly persistent. The contract movement is about normal. Prices are generally holding to schedule. Special paper making starch is still offered at $3.82 per 100 pounds, in bags, and at $3.99, in barrels.

SULPHATE OF ALUMINA.—The sulphate of alumina market is practically unchanged. Consumption has been heavy of late. Prices are steady. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.55, in bags, and iron free at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—Demand for sulphur is excellent for the time of year. Prices remain unaltered. Sulphur is selling at $18 per ton, in lots of 1,000 tons, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and near by car loads the quotation is $21 per ton.

Paper Index Number for May

WASHINGTON, D. C., July 10, 1929—May production index number for the paper industry was 122 compared with 122 for April and with 121 for May of last year taking 1923-1925 at 100, according to the Department of Commerce.

Market Quotations

Paper

(F. o. b. Mill)		
Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
Book, Cased—		
S. & S. C.	6.00	@ 7.50
M. F.	5.75	@ 7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.35	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .80
Kraft	1.00	@ 1.10
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	5.25	@ 5.50
Southern	4.25	@ 4.50
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)		
News, per ton—		
Rolls, contract	62.00	@ —
Rolls, spot	62.00	@ —
Sheets	67.00	@ —
Side Runs	47.00	@52.00
Boards—per ton—		
News	37.50	@ —
Straw	52.50	@55.00
Chip	35.00	@ —
Binders' Boards	65.00	@70.00
Sgl. Mla. Ll. Chip.	47.50	@ —
Wood Pulp	80.00	@85.00
65 Test Jute Liner.	52.50	@ —
85 Test Jute Liner.	55.00	@ —

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	30.00	@33.00
(F. o. b. Mill)		
No. 1 Domestic	26.00	@30.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.75	@ 4.40
Easy Bleaching	2.90	@ 3.10
No. 1 strong unbleached	2.65	@ 3.00
Mitscherlich unbleached	2.70	@ 3.25
No. 2 strong unbleached	2.40	@ 2.50
No. 1 Kraft	2.40	@ 2.75
No. 2 Kraft	2.35	@ 2.50
Sulphate—		
Bleached	3.60	@ 3.85
(F. o. b. Pulp Mill)		
Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.65	@ 3.00
News Sulphite	2.50	@ 2.70
Sulphate Screenings—		
Coarse	.75	@ .95
Refined	1.65	@ 1.85

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White No. 1.	11.00	@11.50
New White, No. 2.	8.00	@ 8.50
Silesias No. 1	7.50	@ 8.00
New Unbleached	11.00	@11.50
Washables	4.75	@ 5.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Blue Overall	7.50	@ 8.00
Fancy	5.75	@ 6.25
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.15	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.90	@ 1.05

Foreign Rags

New Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cuttings	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50

Old Rags

No. 1 White Linens	7.50	@ 8.25
No. 2 White Linens	5.75	@ 6.75
No. 3 White Linens	4.75	@ 5.25
No. 4 White Linens	3.00	@ 3.50
No. 1 White Cotton	5.50	@ 6.50
No. 2 White Cotton	4.50	@ 5.50
No. 3 White Cotton	3.00	@ 4.00
No. 4 White Cotton	1.90	@ 2.15
Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.20	@ 2.40
French Blue Linens	2.75	@ 2.85
German Blue Linens	2.35	@ 2.55
German Blue Cottons	2.15	@ 2.25
Checks and Blues	1.85	@ 2.00
Lindsay Garments	1.90	@ 2.00
Dark Cottons	1.60	@ 1.65
Old Shopperies	1.55	@ 1.60
New Shopperies	1.50	@ 1.60
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.65	@ 1.75
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, Heavy	1.65	@ 1.75
Bright Bagging	1.65	@ 1.70
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	4.40	@ 4.65
Domestic	4.75	@ 5.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.40	@ 2.55
Soft, White, No. 1	2.55	@ 2.65
White envelope cuttings	3.00	@ 3.50
Flat Stock—		
Stitchless	1.60	@ 1.70
Overissue Mag	1.60	@ 1.70
Solid Flat Book	1.50	@ 1.60
Crumpled No. 1	1.10	@ 1.20
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.70	@ 1.80
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.75	@ .80
Container	.57½	@ .60
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.90	@ 2.00
News—		
No. 1 White News	1.65	@ 1.75
Strictly Overissue	.75	@ .80
Strictly Folded	.55	@ .60
No. 1 Mixed Paper	.40	@ .45
Common Paper	.30	@ .35

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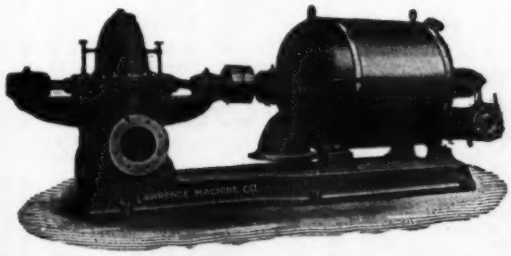

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Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¾	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04½	@	.05¼
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	.03¾	@	.04
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¾
Sulphite Screenings	.03	@	.03¾
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	42.50
Solid News	47.50	@	—
Solid News	40.00	@	45.00
Manila Lined Chip	50.00	@	55.00
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.20	@	2.25
White Env. Cuttings	2.40	@	2.50
No. 1 Soft Shavings	2.00	@	2.10
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.70	@	.75
Ledger & Writings	1.25	@	1.35
Solid Books	1.25	@	1.30
Blanks	1.40	@	1.50
Krafts	1.60	@	1.75
New Kraft Cuts	2.15	@	2.25
Manila Envelope Cuttings	1.65	@	1.75
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.75	@	.80
Folded News (overissue)	.80	@	.85
Old Newspapers—			
No. 1	.65	@	.70
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.60	@	.65
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.09	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.05½	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.09½	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.08	@	.09
Manila Sul., No. 1	.04	@	.05½
Manila No. 2	.03	@	.04
No. 2 Kraft	.06	@	.06½
No. 1 Kraft	.06½	@	.07
Common Bogus	.03½	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	75.00
News Board	35.00	@	40.00
Chip Board	32.00	@	40.00
Wood Pulp Board	86.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.04	@	.03½
Fancy	.05½	@	.06
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.80	@	2.90
No. 2 Soft White	1.80	@	1.90
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.85	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.40	@	1.50
No. 2 Books, light	1.05	@	1.15
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common paper	.50	@	.55
No. 1 Mixed Paper	.60	@	.65
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.80	@	.85
Old Newspaper	.50	@	.55

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2	2.00	@	2.25
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75
Repacked	.02½	@	.04¾
No. 2	1.30	@	1.35
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.06¼	@	.06½
No. 2 Kraft	.04½	@	.05½
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls .009			52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	47.50	@	50.00
Single White, Patent Coated Newsboard Bender	65.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.40	@	2.50
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.50	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	.90	@	1.00
White Blank News	1.50	@	1.60
Old Kraft	1.75	@	1.80
Print Manila	.80	@	.90
No. 1 Mixed Paper	.40	@	.45
Overissue News	.65	@	.70
Old Newspapers	.50	@	.52½
Box Board, Chip	.55	@	.60

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.50	@	1.75
Manila Rope—			
Foreign	4.75	@	5.00
Domestic	5.00	@	5.25
Transmission Rope	2.00	@	2.25
Mixed Strings	.90	@	1.00
Jute Wool Strings	1.00	@	1.05
Scrap Burlaps	1.37½	@	1.50
Scrap Sisal	1.87½	@	2.00
Scrap Sisal for shredding	1.85	@	2.00
Wool Tares, heavy	1.60	@	—
New Burlap Cutting	1.90	@	2.00
Australian Wool Pouches	3.00	@	3.12½

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09½	@	.10
Silesias, No. 1	.06	@	.06¼
New Unbleached	.10	@	.10½
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.50	@	—
Miscellaneous	1.75	@	1.90
Black Stockings	—	@	4.00
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags
(F. o. b. Boston)

Dark Cottons	1.55	@	1.60
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.00	@	5.12½
New Checks & Blues	4.25	@	4.60
Old Fustians	1.90	@	—
Old Linsey Garments	1.85	@	1.97½

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

(Delivered Toronto)

News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

Ground Wood	30.00	@	31.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	60.00	@	—
Sulphite, bleached	77.00	@	—
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.85	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.10	@	.10½
Fancy Shirt Cuttings	.05½	@	—

Friction at this point can be very expensive.

Solutions of Caustic Soda and similar chemicals will wash out the lubricant from ordinary packings that harden and cut the shaft.

CUTNO PACKING

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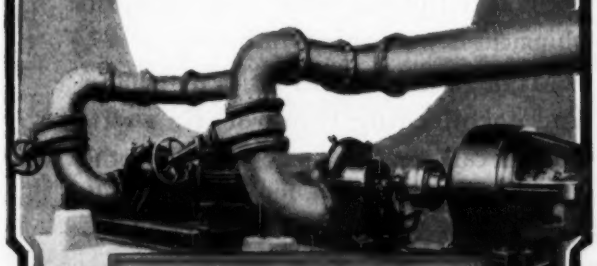

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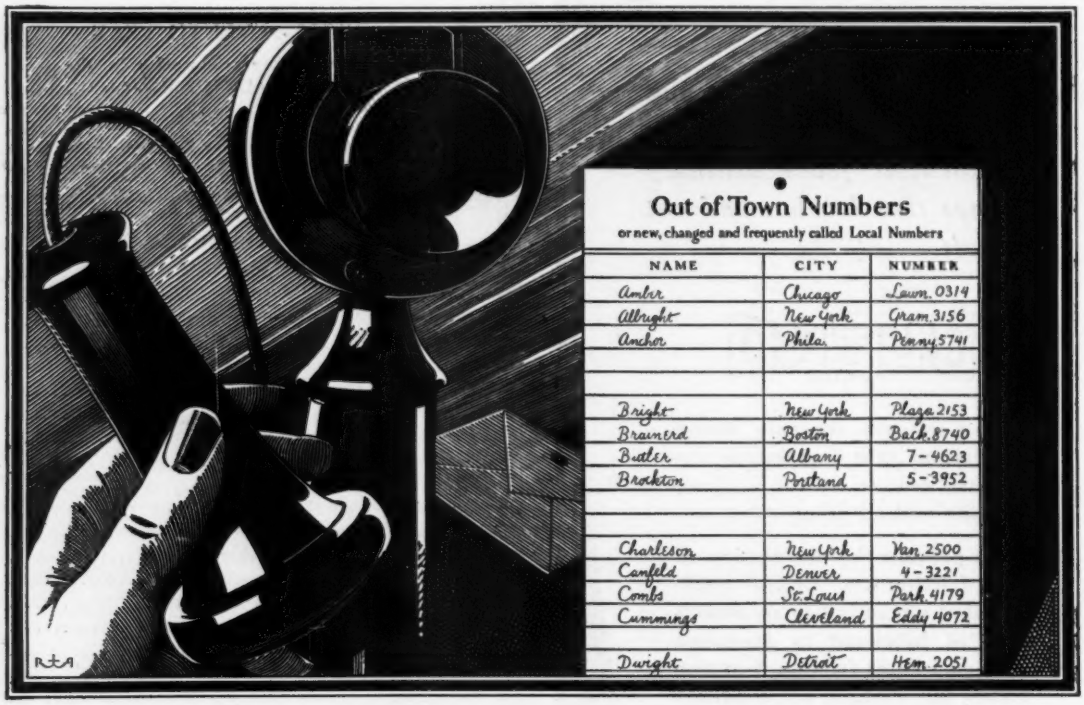
Calling by Number takes *less Time* . . .


Out of Town Numbers
or new, changed and frequently called Local Numbers
NAME CITY NUMBER
Amber Chicago Lawn 0314
Albright New York Gram 3156
Anchor Phila. Penny 5741
Bright New York Plaza 2153
Brainerd Boston Back Bay 8740
Butler Albany 7-4623
Brockton Portland 5-3952
Charleson New York Van 2500
Canfield Denver 4-3221
Combs St. Louis Park 4179
Cummings Cleveland Eddy 4072
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